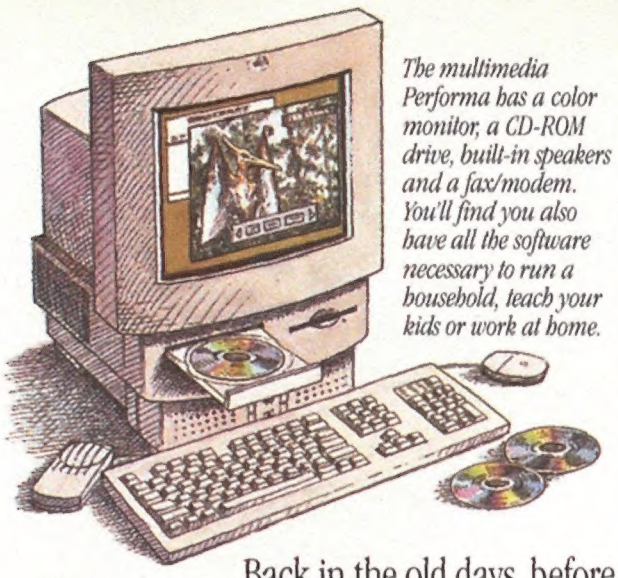
Smithsonian

August 1994

Blossoms made to order: here, *Catharanthus* hybrids **(p. 82)**



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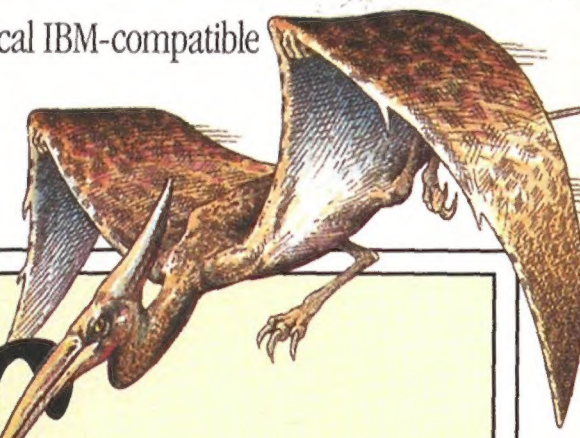
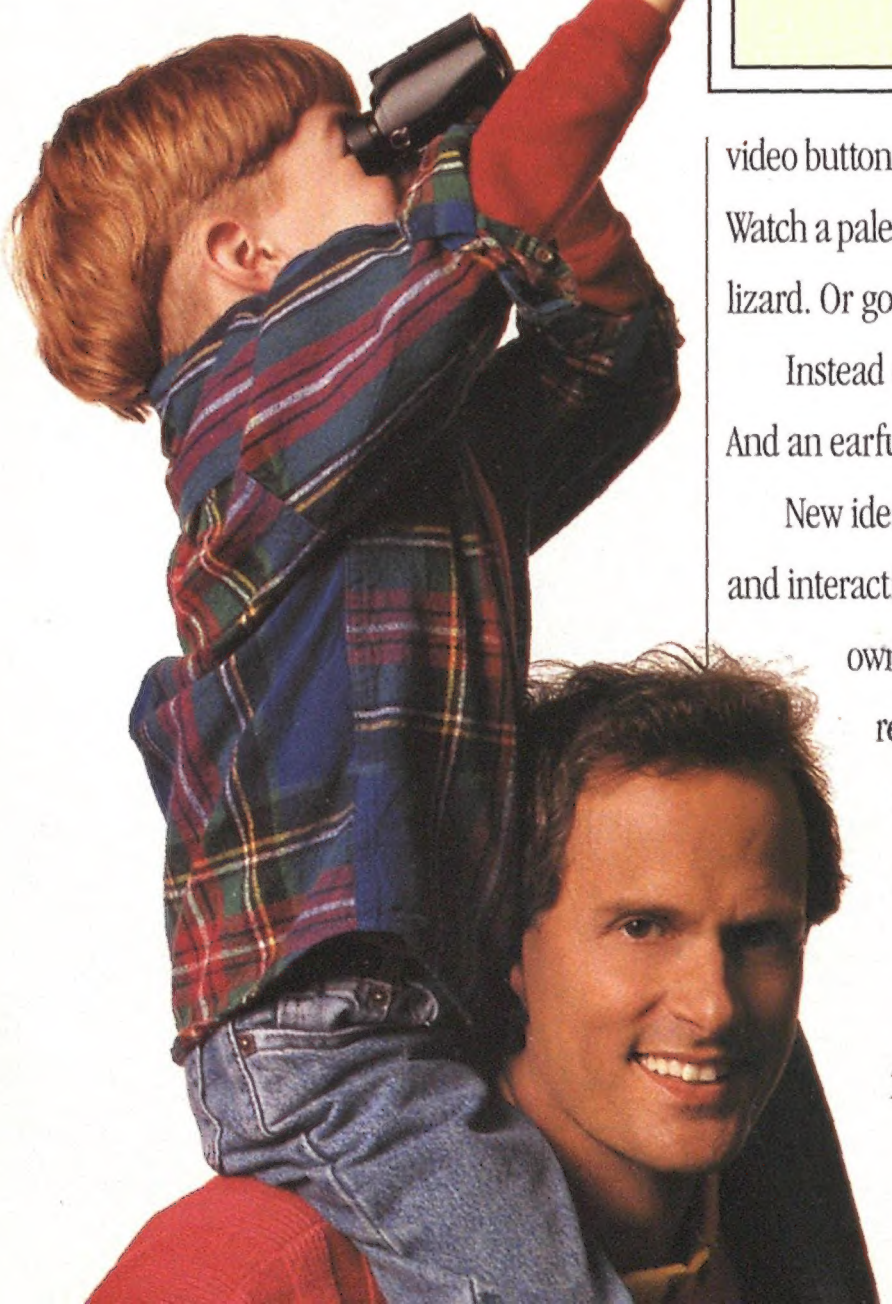


If a computer stimulates your eyes and ears, can your mind be far behind?



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August 1994

Smithsonian

Volume 25, Number 5

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Secretary Adams' comments

Smithsonian horizons

Cultural institutions have much more impact on the economic health of our communities than we had realized

Museums and cultural institutions in this country are certainly not on the brink of extinction. By all reports they are continuing to grow rapidly in numbers. The number of visitors also continues to climb–almost a 40 percent increase in a decade for art museums alone. But there are respects in which museums are becoming an endangered species.

Part of the challenge comes from changes within American society itself. Central-city locations, optimal at the time most older museums were founded, have become remote from much of their audience as a result of continuing outward movements to the suburbs. By law, public demand and moral responsibility, the attention of many museums is increasingly devoted to addressing issues of cultural and ethnic representation. But as yet there are few reliable guideposts to suggest how, in doing so, museums can permanently attract the wider, more diverse audiences they seek.

We are witnessing truly pervasive processes of social fragmentation. The sciences and the arts, the academicians and the "mainstream," the people inside and outside "the Beltway" here in Washington, the older and younger generations–all of these represent lines of polarization or division that are widening. Stereotyped categories play an increasingly prominent part in everyday conversations. More or less narrowly focused, sometimes even single-interest constituencies of a vast diversity are playing a larger role in the choices people make about whom they want to associate with and what they do for education and entertainment. There is no reason to believe that this represents more than the outward swing of a pendulum that will eventually begin to reverse itself, but museums are hard-pressed to be adequately responsive to this situation for as long as it lasts.

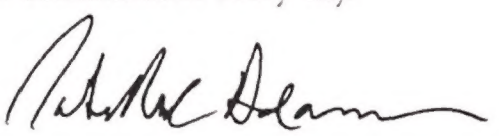
The recognition of this challenge has helped to direct the Smithsonian's attention toward a better understanding of its own audience–present and potential. Last month I touched upon some of the major findings from surveys we have conducted on this subject in recent years. But no less interesting is a study that was completed not long ago on the Institution's economic impact on the Washington, D.C. metropolitan area. It may be worthwhile to briefly summarize it, in the hope that it will have a bearing on the planning now being done by other museums and cultural institutions.

It turns out that we have a surprisingly large impact on the Washington metropolitan region. The expenditures resulting directly from the Smithsonian's payroll, local purchases and construction projects are only the beginning of that impact. Filtering outward for goods and services secondarily purchased in the region, these expenditures indirectly contribute significant tax revenues and support a wider circle of service personnel and business activities. All this, including the indirect increments, can be, and have been, carefully calculated in the study.

Then, moving on to our visitors: some 3,000 of them have been interviewed in museums, monuments, hotels and public settings all over Washington. Data have been collected on the time and expense budgets not only of those who come to the capital specifically to visit its cultural attractions but of those who come on business and stay over for varying lengths of time to do the same. Calculating their expenditures (including those here on business on a pro rata time basis), another, much larger, economic impact emerges. And again there is a still-wider circle of business and service personnel whose presence the visitors indirectly require.

There is not space here to go into details of methodology or calculations. But consider the totals themselves: the Smithsonian's impact on the local economy amounts to $6.7 billion annually, more than 16 times the Institution's direct expenditures. This is no less than 5 percent of the gross regional product for the Washington metropolitan area. It is also roughly twice the District of Columbia's own budget and second in local impact only to the Department of Defense among federal agencies. Not only do the Smithsonian's 5,500 metropolitan-area employees purchase goods, use services and pay taxes, but so do the 90,000 people with jobs generated by visitor spending associated with the Smithsonian.

The larger message is that cultural institutions are more than the anchors of an improved quality of life. While often so heterogeneous that their collective contribution goes unnoticed, they are fundamental contributors to the economic health of the communities in which they are found. Civic priorities usually run instead to convention centers and sports arenas, leaving museums to seek new sources of private support (including escalating entrance fees, in most cases other than the Smithsonian). The public-private partnership principle is healthy and long-established at the Smithsonian, too. But it should not be allowed to obscure the hard economic contributions that museums make to their communities every day.



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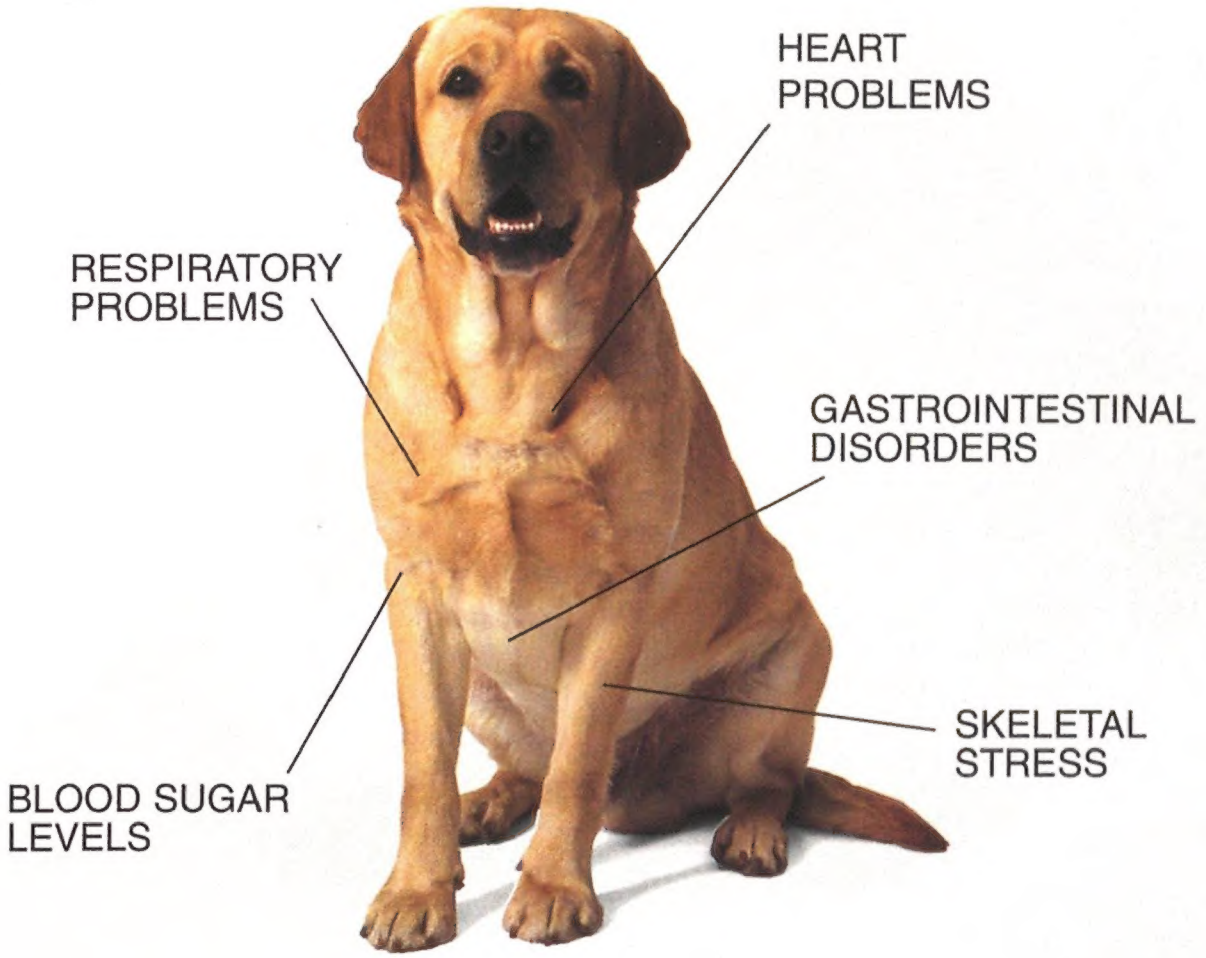

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Letters to the Editor

Mountain bikes

Dear Sir: I have been a hiker, runner and biker on Mount Tam, featured in your June article, for the past 25 years and, believe me, there are more than "a few" hammerheads on the mountain.

On one recent Sunday encounter a group of six young men coming down Zig-Zag Trail stopped to let the "damned hikers" go by. A single male biker on the narrowest part of Dipsea Trail, less than a foot in width, shouted at me to "get the hell out of the way!" I told him that he and his bike would take flying lessons if he was blocking the trail when I got there. He beat a hasty retreat. Both of those trails are clearly marked prohibited for bikes.
Edwin B. Heinlein
San Francisco

Dear Sir: As a member of the AARP who uses the bicycle trails on Mount Tam several times a week, my experience is that in most cases shared use works extremely well. It would be outrageous to deny bicyclists access; we have the right to shared use of public property for this tremendously popular recreational sport.
Steven T. Sager
San Francisco

Dear Sir: The issue is not who should use what trails. It's *what* should use the trails. The battle isn't between hiker, biker and equestrian. It's between user and machine.

Mountain bikes were made for speed, thrills, races, adrenaline rush. Park trails were built for serenity, quiet, contemplation, peaceful enjoyment of nature.

Leave the trails to the hiker and equestrian. Let the fire roads (most are dirt) and ranch roads (also dirt) be used by bikers. They can ride their infernal machines on police patrol or to play polo. Let nature lovers hike trails in peace.
Daphne Elliott
Agoura, California

Dear Sir: My mountain bike was a college graduation present from my father, who wouldn't spring for a car. The bike is still in perfect condition, and I've now been through several cars.

I found your article horrifying. We are besieged at every level by those who want us to behave in a certain fashion. Mountain biking is one of the few things left with few rules, but apparently not for long. I pedal down the trails, the wind in my hair–I will not wear a helmet. The state is now forcing children under 12 to wear them. How long before the law extends to everyone? I have seen signs warning me not to ride on particular trails. How long before I encounter a bike-trail patrol bent on giving me an "attitude adjustment"? How long before the methods of enforcement become more extreme?
Andrew D. Kellogg
Belmont, Massachusetts

Dear Sir: Bicycle polo was reinvented in Crested Butte, perhaps. Aiken Preparatory School had a bicycle polo team at least as early as 1924, according to former students there.
Greg Szymik
Aiken, South Carolina

Pompeii's gardens

Dear Sir: My favorite subject at Indiana Central College in Indianapolis was ancient and medieval history, taught by Wilhelmina Feemster. Along with interesting lectures, she made history come alive with such things as field trips to the Oriental Institute in Chicago, where we could touch relics of this enchanting era.

To explain the principle of the flying buttress, Miss Feemster would face the classroom wall, standing back about four feet. Placing the palms of her hands against the wall, arms outstretched, body bent at the waist, and looking over her shoulder, she'd smile and say, "That is the principle of the flying buttress."

Now, every time I see a cathedral in Europe I think of Miss Feemster and her flying buttress.
I. Craig Uncapher
Kansas City, Missouri

Dear Sir: As a young doctor in the Royal Army Medical Corps I was stationed in Portici, near Herculaneum in 1945-46, with Pompeii a few miles down the road.

My wife and 14-month-old daughter joined me from England when hostilities were over. On a beautiful afternoon in May we took a few hours off to see the famous ruins of Pompeii. We struck a bargain with a guide, who showed us all its pornographic specialties.

Suddenly there was a loud hue and cry with two fat, breathless *carabinieri* chasing an agile young man. Unfortunately for him, he ran straight toward us, roughly pushing my delicate little wife out of his way. I jumped all over the young miscreant and held him until the *carabinieri* came up. They boxed his ears, knocked him to the ground, picked him up and knocked him down three times before hauling him away. His offense? Selling Pompeii pornography pictures to tourists.

Our guide picked some flowers from the garden of the House of Menander and presented them to my wife in honor of the brave and gallant action of the *capitano* who had helped justice so nobly, telling every other guide we met on our tour of the heroic deed.
Richard Kelvin, M.D.
Long Beach, California

Wolf dogs as pets

Dear Sir: The issue of rabies immunization was not touched upon. While legally owned wild canids and hybrids can be inoculated for this justifiably dreaded disease, there is no proof that the animal is actually protected. Because of this, veterinarians must notify the owner of the risk.
Susan O. Arnest
Aiken, South Carolina

Dear Sir: The question is not whether wolves or hybrids make good pets, but rather, if humans make good owners for these animals. A wonderfully deep and meaningful relationship can be found if the animal is respected as an individual with distinct physical and emotional needs, pleasures and limits. If these limits are crossed, the wolf or wolf dog will let you know. Their language may be different, but they are constantly communicating their emotional state.

If people could see these creatures as the intelligent, expressive beings they are, rather than as symbolic possessions, a balanced coexistence could be found.
Cedar Nowicki
Ilfeld, New Mexico

Dear Sir: There are responsible hybrid breeders, as there are responsible and

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informed hybrid owners. And there is a growing movement to diversify the existing species of dogs in order to provide genetic relief from the inveterate inbreeding that has so radically impaired the temperaments and health of purebred species.
Dan Kelley
Baton Rouge

Dear Sir: While captive wolves and wolf-dog hybrids do pose a threat to the safety of humans, wild wolves do not. There has never been a documented case in recorded history of wild wolves attacking and killing humans. They avoid humans, often mate for life, nurture their young, maintain a complex social structure and live in bonded family units called packs. Myths portraying the "big, bad" wolf still abound in programs such as *Barney & Friends*, Disney movies, and the new werewolf movie *Wolf*. The monsterlike image was spawned from human imagination in the Middle Ages. Millions of wolves were destroyed as a result. Today, wolves in the United States are an endangered species, and public education concerning their true nature is critical if they are to survive.
Suzanne Laverty, Director
The Wolf Recovery Foundation
Boise, Idaho

Repetitive strain injury

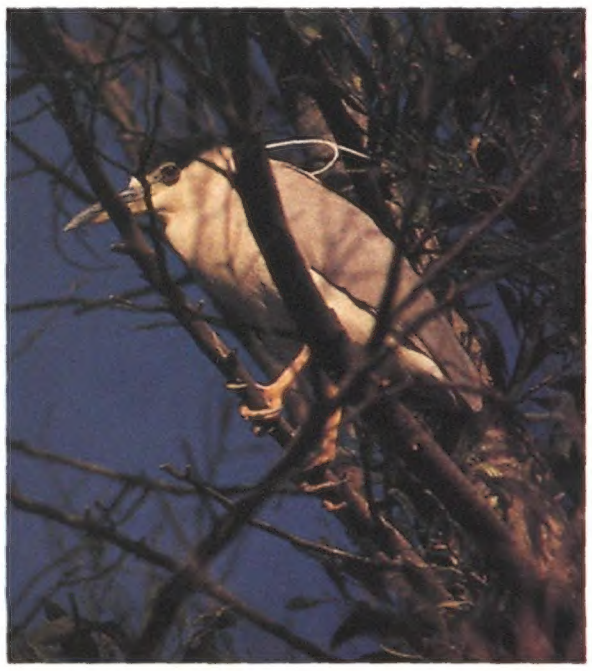
Dear Sir: As a physician engaged in the prevention, treatment and rehabilitation of persons with work-related injuries, my sympathy goes out to Mr. Wolkomir.

But I do not buy the implied notion that some patients he encountered at the Miller Institute were "victims" of equipment. Their injuries are the direct result of their failure to understand and heed the ergonomic imperatives of the tools they chose to use.
William B. Meinke, M.D.
Lexington, Kentucky

Around the Mall

Dear Sir: Edwards Park ponders interactive communication with the great apes at the National Zoo: "What do you ask an orang? 'How's it going with you, old fellow?' And what will he answer?" I would like to take a stab: "It could be worse, I guess. But could you tell me, please, for what have I been condemned to life in prison?"
Andrew Gach
Omaha

Dear Sir: For several years, black-crowned night herons have roosted in the redwood and acacia trees across the street from the Carson Mansion here in Eureka. I've counted as many as three dozen in those few trees at one time. If you stand below them and center your gaze upon one while it is awake (at least one is always awake during daylight hours) and move in for a closer look while it keeps an eye on you [below], there will be a slight indication of agitation, and you will hear it utter a subtle "Qua," a sort of one-syllable cackle.
James Stayton
Eureka, California



World War II gliders

Dear Sir: As the archivist of the Vintage Sailplane Association I have found that these men braved everything from U.S. Navy gunfire to German gunfire, doing their jobs over and over. Many flew five missions through truly hellish conditions, with absolutely no recognition from Army or Air Force. Some deserved the Medal of Honor but did not even get a Bronze Star.
Raul Blacksten
Maywood, California

Dear Sir: Most gliders were wrecked beyond repair in combat landings, but it wasn't the enemy that torched the abandoned gliders. We did.

In 1944 I was assigned to Great Britain with the 26th Mobile Reclamation and Repair Squadron, Ninth Air Force Service Command. Our principal job was to assemble CG-4As at Crookham Common, just outside Newbury.

Two weeks after the landings, 17 of us were sent to Normandy to salvage CG-4As. We fixed up a very few–which were snatched into the air by C-47s for the tow back to England.

The rest were beyond repair, but certain parts were recycled. The fabric fuselage covering made a great waterproof lining and cover for foxholes that cold, wet June. Plywood floors and wings were excellent for patching many broken windows and roofs in Normandy. Drivers took instruments for their Jeeps and trucks. Compasses were handy in a strange land, and altimeters were good barometers. The bank-and-turn indicators vanished too. After five years of war, clever Norman farmers even found uses for the steel tubing and the wonderful nylon towropes, which were dropped when the gliders cut loose.

When salvage was useless, we were ordered to burn the remains, as German artillery was using them for target markers.
George H. Boynton
Bellingham, Washington

Dear Sir: For the record, the Hamilcar glider carried a 7-ton, three-man tank, not a 20-ton; Operation Dragoon took place on August 15, 1944, not in late June.
John L. Lowden
Wilmington, North Carolina

Dear Sir: The Silent Wings Museum, in Terrell, Texas, is an honorable and dramatic tribute to those glider vets like my uncle Maj. Jack C. Riddle, USAF (ret.), who flew into France during the invasion and also on numerous other unheralded missions, including the crossing of the Rhine.
Richard Riddle
Dallas

Phenomena, comment and notes

Dear Sir: Three cheers for Professor Trefil's commentary on having a close encounter with *Star Trek* science at a recent AAAS convention.

I must point out with a certain amount of pride, however, that I and every other "scruffy graduate student" who have followed the show and its mutations since the age of 6 knew all the time that the technologies and realities posed by its writers and producers were just a stone's throw away.

It is heartening to know that older generations of thinkers are finally getting in step with us.
Stephen Nyland
Syracuse, New York

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Around the Mall and beyond

The sundial's time-telling at first is quirky, but given a little know-how, it is as accurate as a modern watch

About a year ago a few people gathered at the Smithsonian's Enid A. Haupt Garden by the Castle to dedicate a new acquisition–a handmade brass sundial on a waist-high stone pedestal. I ought to do something about it, I told myself, and then put the idea safely out of mind.

A sundial seemed too simple to make a column for exceedingly bright and curious readers. Sundials show up everywhere, in gardens and college campuses, and you can buy one from a large garden shop for (according to one such place) between $25 and $125, depending on size and quality. So what's to write?

But the thought of sundials niggled, and I visited one near my home in Annapolis, Maryland. It was just outside the old Naval Academy Hospital, around which I habitually ride my bike. I climbed off to look at it and found that its time came reasonably close to what my wristwatch showed. That interested me enough to try reading a classical treatise about sundials, but I soon bogged down in something called gnomonic cosmography. I did manage to make my youngest grandson's day by telling him that the gizmo that leaves its shadow on a sundial is a "gnomon." That, according to my dictionary, is a word derived from the Greek meaning "interpreter" or "one who knows." My grandson likes to use "gnomon" now.

Realizing at last that writing a short piece about a sundial wasn't apt to be simple, I went back to the Haupt Garden and talked with the two people who had conceived and built the new sundial: David Shayt and David Todd.

Both Davids work at the National Museum of American History, Shayt as a specialist in the Division of Community Life, Todd as a horologist–a clockmaker–in the Division of Engineering and Industry. It took them no time at all to discover that they had a complete ninny on their hands, one who didn't even know an analemmatic dial from an armillary sphere. So they gave me a quick "See Spot Run" course in sundials.

Obviously they provide a very old way of keeping an eye on the passage of time, dating back to about 1500 B.C. Yet by 200 B.C. the devices had become so commonplace in Rome that one wit bemoaned the "wretch who first . . . set a sundial in the market place to chop my day into pieces." Geoffrey Chaucer apparently knew how to tell time by reading the sun's shadow. In "The Parson's Prologue," in his *Canterbury Tales*, Chaucer describes the sun going down to "Degrees nine and twenty as in highte. / Four of the clock it was, so as I guesse– / For eleven foot, or litel more or lesse, / My shadow was at thilke time as there, / Of swich feet as my lengthe parted were / In six feet equal of proporcioun."

Which is a fairly bewildering Chaucerian way of saying that he knew that the ratio of his six-foot height (I didn't know Chaucer was six feet tall!) to his 11-foot shadow indicated it was around 4 P.M.

If Chaucer had carried a sundial, he'd have been sure of it. "When it's set up right," said David Todd, "and the corrections are made, a sundial is so accurate that the French, even into the first part of this century, used them to regulate their railway service."

To set the thing up right and make the necessary corrections seems easy enough, but as you go along, a series of complications arises. The dial must be perfectly horizontal, so you set it up with a level. You aim noon at true north. If you use a compass you'll get magnetic north, so you must figure in the variation, which you can find in a nautical chart, among other places. The Davids, of course, wanted to be ever so precise, so they found true north by the sun's southing–that is, they calculated the exact time of solar noon (something I'm sure our exceedingly bright readers can already do) and then at that time aligned the sundial to read noon.

You must also find the latitude. The gnomon, facing true north, rises from the dial face at exactly the same angle as the latitude–in the Smithsonian's case, 38 degrees, 55 minutes north. Next, you must know the exact longitude of the dial. The one in the garden is 77 degrees, 1 minute west. That figure allows you to adjust the sun time on the dial to clock, or standard, time.

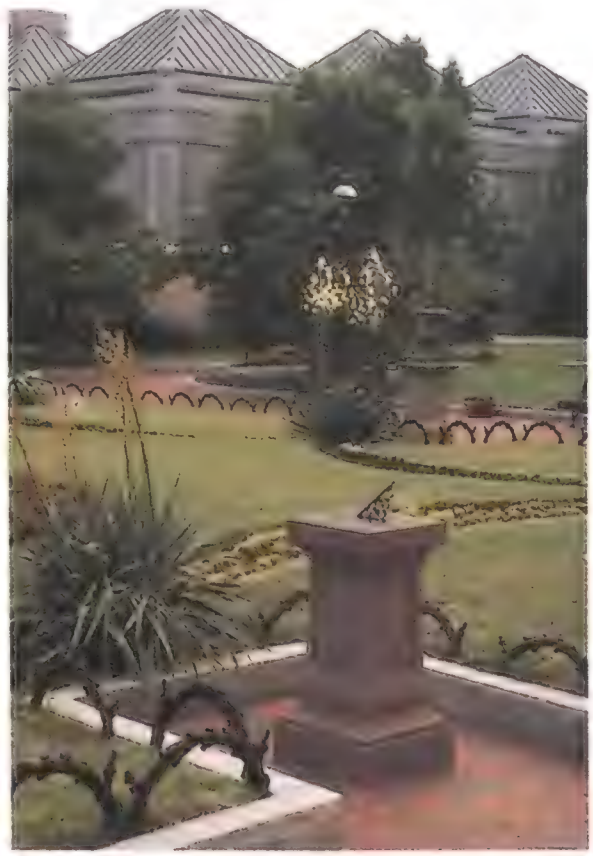
The Smithsonian sundial is roughly 2 degrees west of the line of longitude on which Eastern standard time is based: 75 degrees west. Each degree is worth four minutes of time. So when you read the dial you must remember that it's eight minutes slow. Now, that's perfectly straightforward, right? If you're looking at a sundial in Denver, you won't have to add or subtract a thing because you're right on 105 degrees west, which is the meridian defining mountain standard time.

Nothing could be simpler. Eagerly, I gazed at a good, sharp shadow on the Smithsonian sundial and came up with 10:35. To make that correspond to clock time, I added those eight minutes and got 10:43.

"But wait a sec," said David Todd, whose accent proclaims England, actually the south coast. "The fact is that in summer, the sun's difference in time is less."

"*What?*" I said.

"You see," Todd explained patiently, "Earth rotates on a tilted axis and that means–well, just take my word for it: there's a distinct seasonal variation that's



In Enid A. Haupt Garden, shadow moves across the face of Smithsonian's new sundial, evoking charm of another time.

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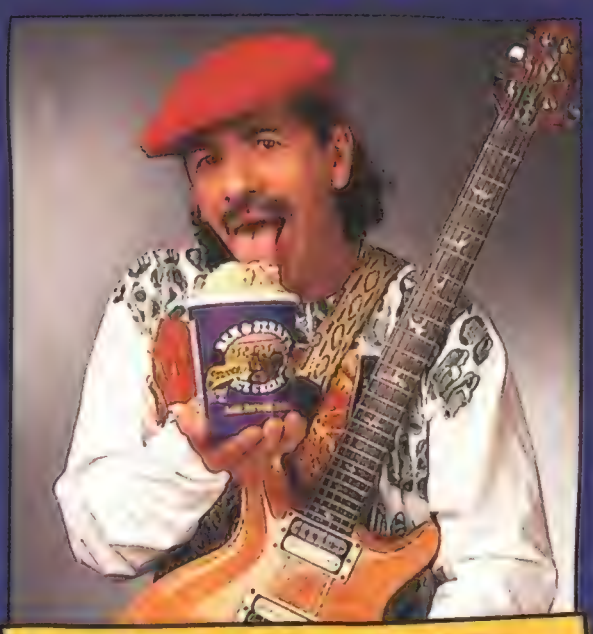

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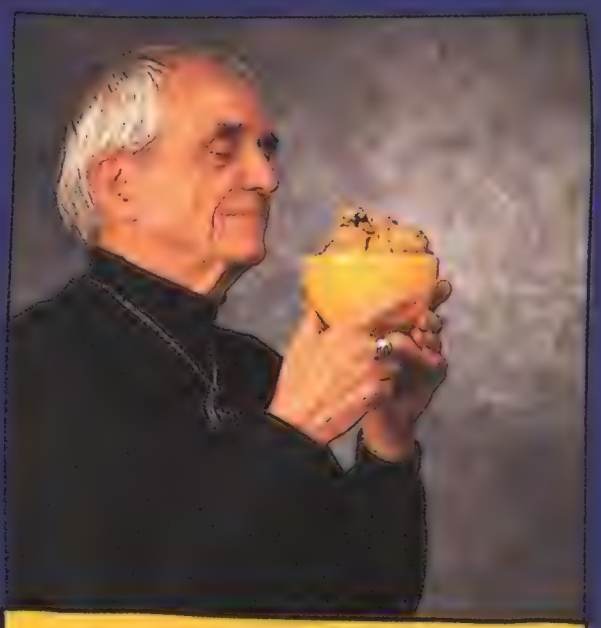

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all worked out. Now, let's see–this is May–in May the difference is minus three minutes. So you subtract three minutes from eight minutes."

Instead of adding eight to what had now become a sundial time of 10:36, I added five. 10:41.

"Look at your watch," said Shayt.

It showed a little past 11:40.

"Daylight saving," they chorused triumphantly. "Right on!"

Don't expect a $40 garden-shop sundial on a plastic pedestal to do as well. A saleswoman told me that manufacturers generally fix the angle of the gnomon at the approximate latitude of the areas that retail the sundials: 40 degrees around Washington, D.C. and Philadelphia; 45 degrees in Minneapolis. New Englanders who bring their old sundials with them when they retire to Florida won't have much luck telling time with them. Yet I lined up my three-inch-wide brass paperweight–a simple round sundial with an old boat compass of dubious accuracy–and got a reading only minutes off from my watch. Astonished, I checked the angle of the paperweight's gnomon with a protractor: 38 degrees. Bull luck.

In 1990 Todd and Shayt visited Georgetown, the capital of Guyana, to study, clean and repair several of the city's clocks. That country, on the northern shoulder of South America, has often welcomed Smithsonian research teams. In the Botanic Gardens they found a sundial with a gnomon that lay almost flat.

"The latitude was a little more than 6 degrees north," Shayt told me. "To tell time during the middle of the day, you had to deal with hours so crowded together on the dial that they were hard to read. That's why there aren't many sundials in the tropics."

It was that sundial that inspired the two to build the Smithsonian's. Shayt worked out the place in the garden–right on its central north-south axis. Todd made the dial, cutting the brass gnomon by hand because a power scroll saw was just too rough for it. Leonard Resnick, a Baltimore engraver who learned his craft in "rehab" after being badly wounded in World War II, hand-engraved the dial at no charge, copying Todd's layout, and the artwork and lettering of Stan Nelson of NMAH's Graphic Arts Division.

The four seasons appear at the dial's corners–engraved as imaginary faces and symbols of weather conditions. The one depicting summer features the Smithsonian sunburst. Finally, the pedestal was carved of stone similar to the Castle's by Joseph Moss, with help from Smithsonian friend Constantine Seferlis, who also carved stone for the Washington National Cathedral.

I asked about the vertical sundials that you see on some old walls and towers in Europe. The Davids agreed that they could have put a sundial with a different layout on the wall of the Castle's south side, to get full sunlight. The gnomon would then point down at the complementary angle of latitude.

Noticing the glaze in my eyes, they kindly pointed out that at a latitude of 38 degrees north, "you'd subtract 38 from 90 degrees and cut your gnomon for a vertical dial at an angle of 52 degrees."

"Oh, sure," I said.

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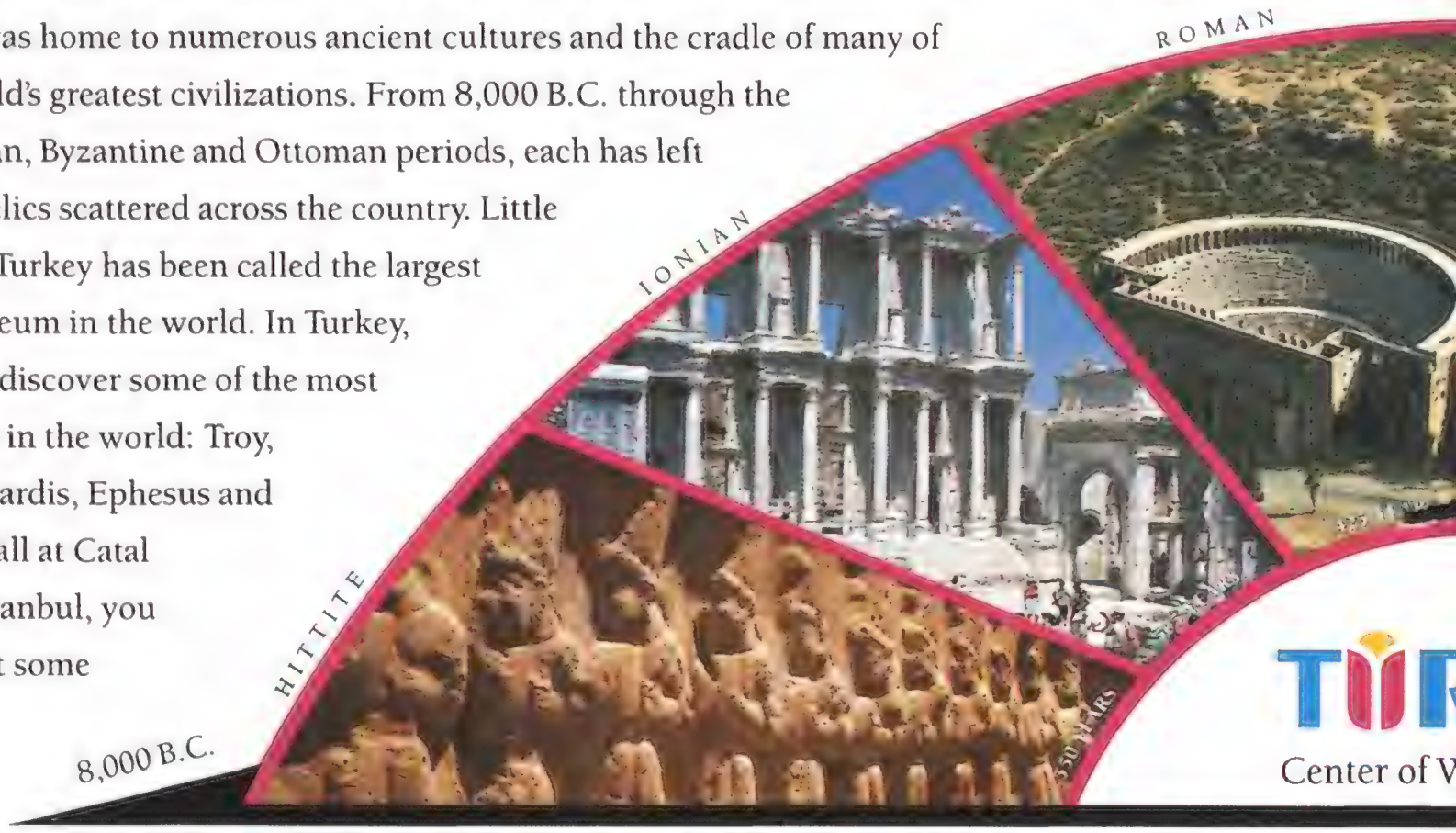
Turkey was home to numerous ancient cultures and the cradle of many of the world's greatest civilizations. From 8,000 B.C. through the Hittite, Roman, Byzantine and Ottoman periods, each has left fascinating relics scattered across the country. Little wonder that Turkey has been called the largest open air museum in the world. In Turkey, you will also discover some of the most ancient cities in the world: Troy, Pergamum, Sardis, Ephesus and the oldest of all at Catal Höyük. In Istanbul, you will marvel at some of the most



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TURKISH

Back home, I had often biked past a large sundial right on the campus of the U.S. Naval Academy. Newly enthused, I stopped beside it and learned that it's a unique "self-orienting" sundial, designed by a midshipman of the class of 1968. When I first climbed off my bike for a good look, I touched it and it moved. I was quite certain I'd broken it and would face a naval firing squad.

But its inventor, Robert S. Owendoff, now an engineer, having retired as a lieutenant commander, put my mind at ease. "That's the whole point," he told me. "'Self-orienting' means you adjust it yourself when you want to use it."

Owendoff showed me the complex lines, like a curving graph, inscribed on the dial. A strange figure eight in the center goes by the daunting name "analemma," to which I have not yet subjected my grandson. It coordinates sun time with standard time. A shadow is cast by a small bronze model of a U.S. Navy missile.

You turn the entire dial until the tip of the missile's shadow intersects the curved line for the date. Then you can check the time lines and make corrections by following instructions inscribed on the dial. "It's accurate to within two minutes, provided you don't make any mistakes. And it finds north for you," Owendoff said.

He is as interesting as his device. As a schoolboy he grasped the implications of sundials, did a prizewinning science project that revealed a mistake in the Encyclopedia Britannica and appeared on TV's *To Tell the Truth*. He published a book while a plebe (freshman) at the Academy, got his sundial built and presented it as a gift from his graduating class.

He then used his "shadow-tip" sundial concept to fashion a simple, portable dial that would serve as a pocket navigator for downed airmen whose compasses malfunctioned. He told me that his best moment was when he learned it had saved the lives of some U.S. Marine pilots who had been downed in Vietnam.

And so my simple inquiries about the Smithsonian's new sundial opened the gates to a bewildering array of cosmological problems, strange new words and concepts, Roman wit and lore older than the Pantheon and a rescue aid for pilots of jet fighters. And today it's raining, and none of my new, momentary knowledge is worth a damn.

Edwards Park

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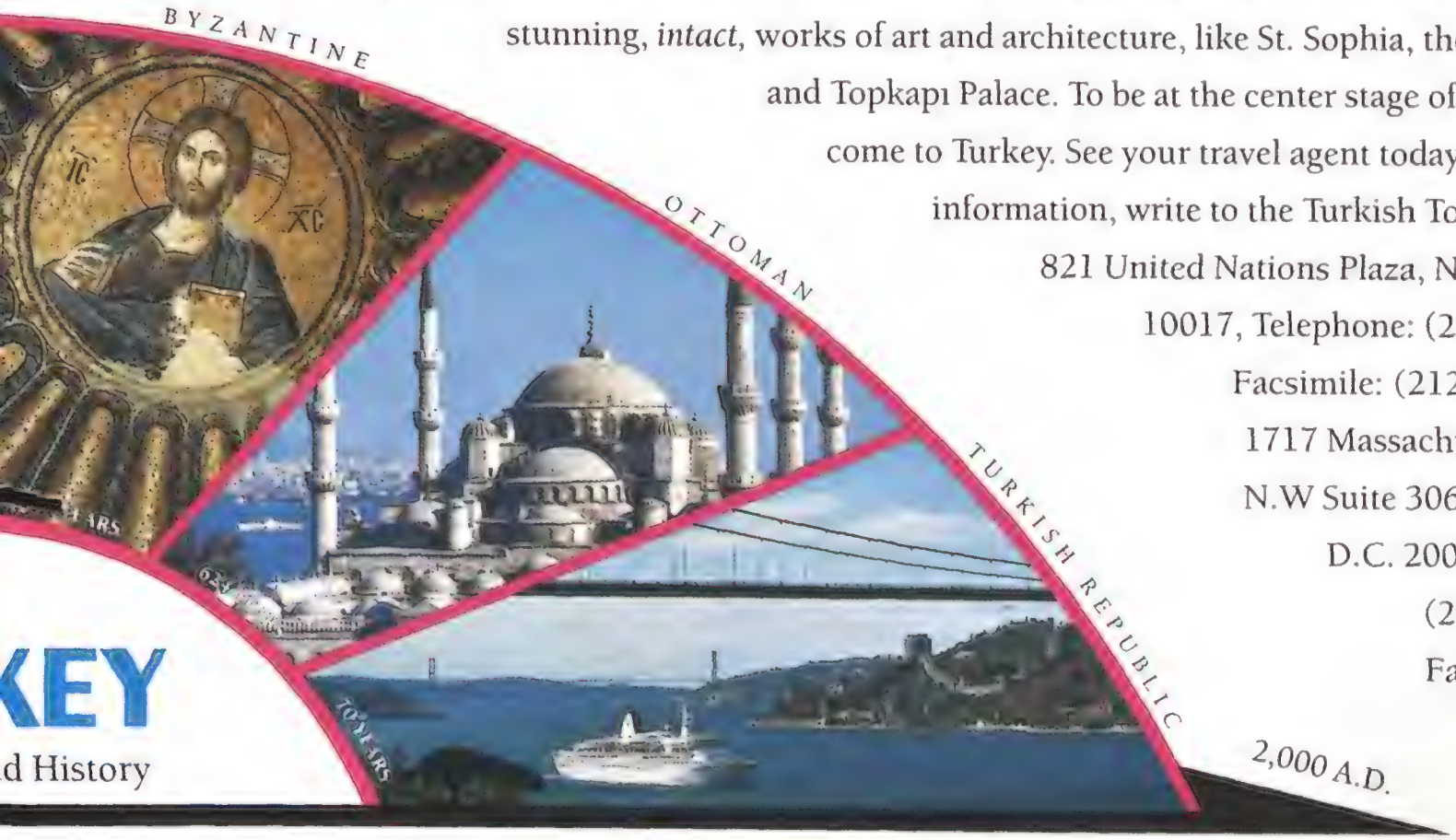

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The object at hand

Huge limestone face capped by sunbeams once sat on stylized clouds atop a column of the Mormon temple in Nauvoo, Illinois.

A sunlike visage carved in stone still bears witness to a tale of Mormon hope and Mormon tragedy

High above a brightly lit hall at the National Museum of American History sits a huge face, carved in white stone. Stylized sunbeams ray out from the top of its head. The full cheeks frame a puckish, enigmatic smile. Clouds and a pair of hand-held trumpets provide decor. It is six feet wide by four feet tall and weighs more than two tons.

This sunlike visage speaks of the hope that carved it, and raised it high. But it and its story are also shadowed by the tumult and tragedy of the early Mormons, whose symbol it was. Carved of limestone in 1844 as the decorative top of a stone column for a grandiose temple of the Church of Jesus Christ of Latter-day Saints at Nauvoo, Illinois, the sunstone dates from the time when the first generation of Mormons struggled to build a worldly–and otherwordly–kingdom in the more-rough-than-tumble American heartland of 150 years ago. Repeatedly in the largely hostile and Protestant Midwest, they tried to carve out a holy city in the wilderness, first in Ohio and Missouri, then in Illinois. Repeatedly they were driven out by non-Mormon neighbors.

Then as now Mormons were sober, hardworking, frugal and highly organized. Even before the issue of polygamy, intolerance and open hatred were fueled by fears of their commercial aggressiveness and their increasing political power. Outrage was also stirred by the teachings of their prophet, a tall, blue-eyed young man named Joseph Smith. The untrained son of hardscrable farmers in western New York, Smith claimed that starting at age 14 he was visited by divine messengers who told him to establish a dramatically revised version of Christianity. It was to be based on ancient Hebrew traditions, as well as original Christian beliefs, many of which, Smith contended, had been lost through apostasy and corruption. Smith and his followers believed in the Bible, but did not regard it as a complete guide to divine will. He added other scriptures, revealed to him, he said, by an angel called Moroni, and translated them into the Book of Mormon. Thus, a crucial feature of the new church was its claim to have a living prophet–at the time, Smith himself, able to lead his flock by receiving direct revelations from God.

From the first, Smith possessed a charismatic mix of presence and personal magnetism. "When he took my hand, I was simply electrified," Mormon convert Emmeline Wells wrote of her first encounter with Smith in the mid-1800s. "The one thought that filled my soul was, 'I have seen the Prophet of God. . . .'"

Starting in 1830 the Church of the Latter-day Saints grew steadily. Soon Smith was traveling, first to Ohio, then on into various parts of Missouri, in an attempt to establish a secure Mormon foothold. But already, in the 1830s, unsympathetic outsiders were suspicious of this clannish, communal and tightly knit offshoot of Christianity.

Few men in recent history were to be more deified or more despised than Joseph Smith. One of his detractors described him as "one of the grossest and most infamous imposters that ever appeared on the face of the earth." His followers, it was claimed, were a "fanatical tribe," preachers of "contemptible gibberish" who had "openly blasphemed the Most High God."

By the winter of 1838-39, several thousand Mormons who had briefly come to rest in northern Missouri were forced to flee. Some of their number had been murdered. After outraged neighbors charged Smith with treason and tossed him into prison, the Mormons sought safety in Illinois. In late spring, Smith escaped from jail, and fortune seemed to smile again. He found a spot at a bend in the Mississippi near a hamlet then known as Commerce. It was on a swampy peninsula "so unhealthful," Smith wrote, that "very few could live there." But the ground sloped gently up from the river to a high bluff. Smith vowed, "by the blessing of heaven," to build a city there.

Renaming the site Nauvoo, a name adapted from the Hebrew word for "beauty and repose," they set to work laying out a city–one mile square with a gridiron of blocks, each to be divided into four equal lots. Missionaries were dispatched far and wide. "We may soon expect to see flocking to this place, people of every land," Smith predicted, "the polished European; the degraded Hottentot, and the shivering Laplanders; persons of all languages. . . ."

In fact, thousands of Mormons from Great Britain, Canada and the Eastern United States soon converged on Nau-

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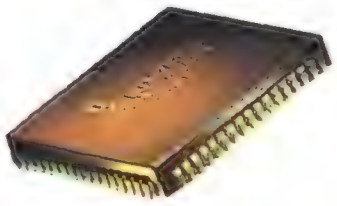

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voo. More than 2,000 houses went up in the first year alone, as well as schools, flour and lumber mills, tool and chinaware factories and a large armory (to store rifles and a cannon). Though malaria swept through town, Nauvoo's population continued to grow spectacularly. By 1844, it had attracted 10,000 residents and was well on its way to rivaling Chicago as the largest city in the thriving state of Illinois.

But Nauvoo was different. There church and state were one and the same, with no separation of powers between the branches of government; Nauvoo's mayor also served on the city council and was the chief justice of the municipal court. To no one's surprise, Joseph Smith himself took on this three-in-one job, over and above his role as prophet and head of the church. He also proudly bore another title–as lieutenant general and ceremonial leader of the Nauvoo Legion, the city's 2,000-man militia, the largest such militia unit in Illinois.

The project closest to his heart was the construction of the city's biggest building, the Nauvoo Temple. He envisioned something on a "magnificent scale," that "will undoubtedly attract the attention of the great men of the earth." A sacred place of worship, the temple was to be a soaring symbol of the temporal and spiritual kingdoms enjoined under his authority, the crowning glory of Joseph Smith's city in the wilderness.

Early in 1844, when Harvard University president Josiah Quincy visited Nauvoo, he declared the temple "a wonderful structure, altogether indescribable." Neoclassical in style, it was indeed immense: 128 feet long, 88 feet wide, with a Georgian tower looming 165 feet above the ground.

The temple was designed and supervised by Church Elder William Weeks. Its most distinctive features were 30 monumental pilasters ringing the exterior walls, each topped by a huge, hand-carved image of the sun. The frieze above the sunstones was studded with stars; crescent moons adorned the column bases. No one knows exactly what the symbols meant, though they were said to represent the Mormon vision of the ultimate glory, with the sun representing God and His heavenly kingdom.

In 1848 arsonists set fire to the temple; only its stone frame was left standing.

To "share in the glory and triumph," Mormons turned over an ample portion of their goods to pay for the temple's construction or volunteered labor. Some donated farm animals, food, even land. More than 100 male volunteers at a time worked on the project, quarrying, hauling, carving and raising stone, laying bricks, and erecting the beams and wooden supports inside the building.

When it was finished the total construction cost was reckoned at $800,000.

Even as work on the temple grew, a new controversy threatened. In September 1843 a young non-Mormon resident of Nauvoo, Charlotte Haven, wrote to her family telling them of some "wonderful revelations" that the elders "dare not speak aloud." She was referring to the return of Elder George J. Adams after a missionary stint in England. In tow he brought his new wife and child–nothing extraordinary about that, except for one slight detail: Elder Adams already had a wife and family in Nauvoo. "I am told that his first wife is reconciled to this at first unwelcome guest in her home," Charlotte wrote. "Her husband and some others have reasoned with her that plurality of wives is taught in the Bible."

At least as early as 1841, Joseph Smith and other Mormon leaders had practiced polygamy, though not in the orgiastic fashion detractors would accuse them of. By the summer of 1843 the practice of what was called "celestial marriage" had been incorporated into Mormon religious rites, based on revelation.

When a newspaper, run by a group of dissident Mormons, went public with salacious stories about this practice and other complaints, Smith had the newspaper raided and its presses destroyed. As a result, the Mormon Militia was disarmed by state authorities and in June 1844 Smith went to jail, this time in Carthage, Illinois. Several days later a mob attacked the place and shot him.

A sporadic campaign to destroy crops and burn barns on outlying Nauvoo farms began, but the Illinois Militia was unable or unwilling to protect the citizens of Nauvoo. By late September 1845, a tough new leader, Brigham Young, decided that it was time to move West. But not quite yet. All through the troubles, work on the temple continued. After more than five years of backbreaking labor and sacrifice, in early May 1846 the structure was finally dedicated. By June more than 12,000 members of the Nauvoo community had crossed the Mississippi on a journey westward that would end in Utah. They had "obtained already all they have labored for," as Brigham Young put it, and once more were in search of a home place.

A traveler passing through Nauvoo shortly after the exodus described the scene: "windows were broken, doors were open and sagging. No domestic animals were to be seen."

Up on the hill above the city, the temple stood abandoned. In October 1848, in a fire set by the torch of an arsonist, its roof caved in and the interior walls crumbled. The last skeletal remains were toppled two years later when a tornado ripped through Nauvoo.

For years the sunstones lay in the ruins. At the end of the Civil War, one was hauled downriver by steamship to Quincy and put on outdoor display by the local historical society. It wasn't until quite recently that the great round stone, only one of two still in existence, found its way to the Smithsonian's National Museum of American History. The words that were inscribed above a pulpit in the temple provide a fitting epitaph to that chapter of the Mormon story: "The Lord has beheld our sacrifice."

Elizabeth Schleichert

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Begin your visit at the Smithsonian Information Center's Associates' Reception Desk–open 9 A.M.- 4 P.M. daily–in the Castle. The Court dining room, in the National Museum of Natural History, offers buffet service daily, 11 A.M.- 3 P.M.

Extended summer hours

Three Smithsonian museums–American History, Air and Space, and Natural History–will operate on extended hours, 10 A.M.- 6:30 P.M. daily, through Labor Day, Monday, September 5. Hours at the National Zoo are 9 A.M.- 6 P.M. daily for buildings, 8 A.M. - 8 P.M. for grounds, through September 15. Other museums are generally open 10 A.M.- 5:30 P.M. daily.

American Festival Japan '94

The Smithsonian's America A special exhibition developed by the Smithsonian Institution for the American Festival Japan '94 is being held through August 31 at the Nippon Convention Center outside Tokyo (SMITHSONIAN, July 1994).

Special August exhibits, events

Renwick Gallery
Contemporary Navajo Weavings: The Gloria F. Ross Collection of the Denver Art Museum (through August 21) The artistry of modern Navajo carpets and tapestries.
See *Highlights continued*, page 20.

National Museum of American Art
North American Wildflowers: Watercolors by Mary Vaux Walcott (through August 29) Fifty paintings by the American artist, naturalist and explorer (1860-1940).

National Portrait Gallery
Gertrude Käsebier, Photographer (through October 2) The fine art of the pioneering turn-of-the-century photographer.
Reporting the War: The Journalistic Coverage of World War II (through September 5) The war experiences of 35 journalists.

National Air and Space Museum
Where Next, Columbus? Permanent exhibition looks ahead to the next 500 years of space exploration.
Beyond the Limits: Flight Enters the Computer Age The computer revolution in aerospace.

National Museum of Natural History
Spiders! (through January 2, 1995) Revealing look at these master builders.
The Tongass: Alaska's Magnificent Rain Forest (through September 10) SITES photography exhibit.

National Zoological Park
Amazonia Permanent installation re-creates a microcosm of the world's largest rain forest and river habitat.

National Museum of American History
Science in American Life New permanent exhibition tracks advances and discoveries in science over the past 125 years.
The Segesser Hides (through October 30) Buffalo-hide paintings are two of the earliest depictions of conflicts involving North American Indians and Europeans.

© Pan American Airways

War correspondent Ernest Hemingway was photographed c. 1944; from NPG show.

National Postal Museum
The Smithsonian's newest museum, located next to Union Station on Capitol Hill, presents exhibitions tracking the history of the nation's mail service.
Gems of Hawaii: The Honolulu Advertiser Collection (through September 26) Rare stamps and covers.

Arthur M. Sackler Gallery
Landscape as Culture: Photographs by Lois Conner (August 14-May 30, 1995) Large-format platinum prints by the contemporary American-born photographer depict the landscape and architecture of Asia.

Freer Gallery of Art
Beyond Paper: Chinese Calligraphy on Objects (August 26-April 23) Clay, lacquer, metal, jade, bamboo, wood and horn objects date from the 7th to the 19th century.
Ancient Egyptian Glass (opens August 13) Fifteen colorful, jewel-like vessels made during the second millennium B.C.

National Museum of African Art
Beaded Splendor (through October 9) How beads have been incorporated into African dress to create works of art.

Hirshhorn Museum & Sculpture Garden
Felix Gonzalez-Torres (through September 11) Minimal, interactive, mixed-media installations by the Cuban-born artist.
The Collection Reviewed: Thomas Eakins (through September 11) Exhibition honors the renowned Philadelphia realist.

Anacostia Museum
Black Mosaic: Community, Race and Ethnicity among Black Immigrants in Washington, D.C. (August 21-August 1, 1995) Oral histories, art, photographs and other materials reveal cultural diversity.

S. Dillon Ripley Center,
International Gallery
Talents of the Brush: Jill Sackler Chinese Calligraphy Competition (through September 25) Prizewinning works.
Concourse and Rotunda Gallery
Sculptures from the Flames: Ceramics by Gustav and Ulla Kraitz (August 28-November 28) Swedish ceramic sculptures.

Cooper-Hewitt Museum (New York)
A Royal Gift: The 1826 Porcelain Jewel Cabinet (through September 18) Unique cabinet was made by the renowned Royal Porcelain Manufactory at Sèvres, France.

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Highlights continued

The enduring art of Navajo weaving

In 1979 tapestry artist and collector Gloria F. Ross made her first visit to the Navajo Reservation, a 16-million-acre parcel in Arizona, New Mexico and Utah. Ross was looking for weavers willing to render into tapestries designs created by contemporary artist Kenneth Noland, whose imagery, she felt, would be simpatico with the Navajo esthetic and traditional upright loom. She was accompanied on this trip by anthropologist Ann Lane Hedlund, a specialist in Navajo weaving.

Fifteen years later, Ross and Hedlund are still making annual visits to Navajo weavers. Over the years, Ross has commissioned dozens of tapestries. In the process, she began assembling a collection of contemporary Navajo rugs. Seeking a wider audience and fine art status for Navajo weaving, Ross decided to give her collection to a major art museum.

"Contemporary Navajo Weaving: The Gloria F. Ross Collection of the Denver Art Museum," on view at the National Museum of American Art's Renwick Gallery through August 21, represents a unique collaboration between donor, researcher, weavers and museum. The show features 38 rugs and tapestries made by Navajo artists between 1980 and 1992. Eclectic in inspiration and spirit, these works are distinguished by their individuality and technical excellence. Blending the threads of tradition and innovation, they form an enduring body of art–a body of art that testifies to the diversity and vitality of Navajo weaving today.

Diane M. Bolz

Gloria Ross commissioned weaver Irene Clark to create this tapestry from a design by artist Kenneth Noland in 1990. Clark named it *Naats' iilid* (*Rainbow*).

Rose Owens kept secret her technique for making unusual, spiderweb-inspired rugs.

Hubbell Revival Rug (1980) was woven by Mary Lee Begay from a 1905 design study.

Op-art pattern of *Stacked Boxes* by Mary Brown creates illusion of depth.

Striped 19th-century "Moki" blankets were impetus for 1991 rug by Gloria Begay.

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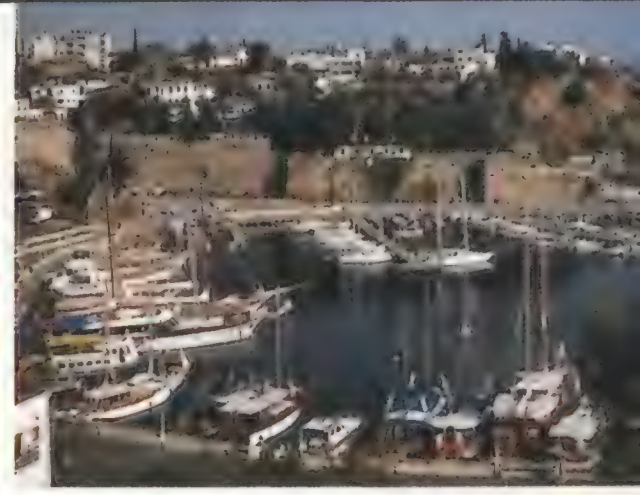

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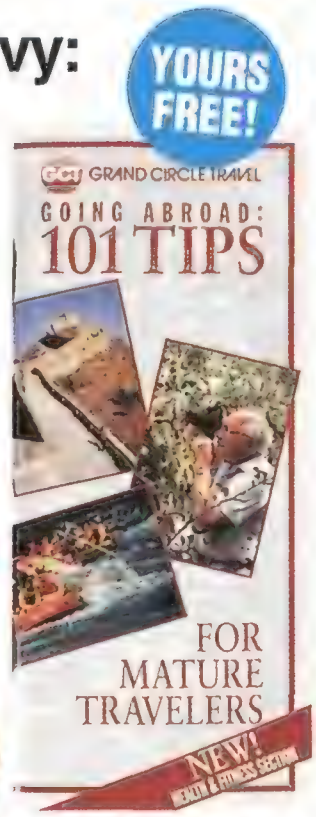

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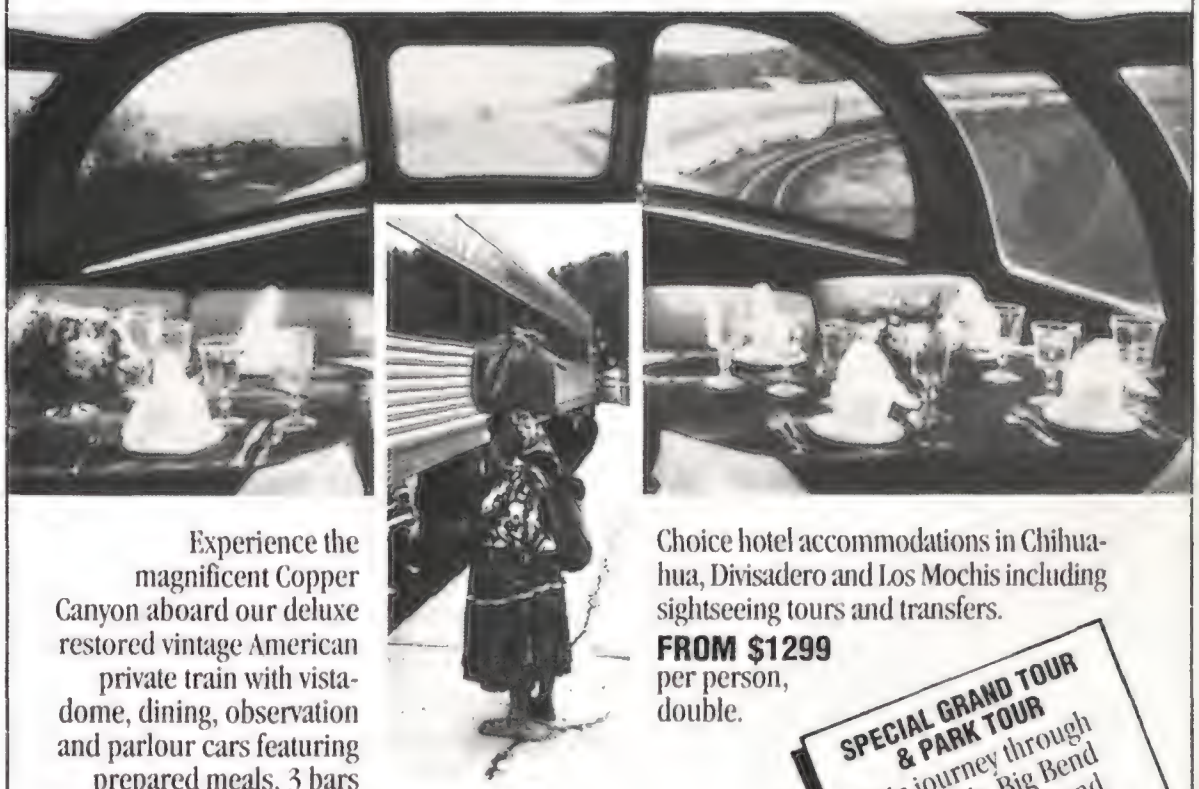

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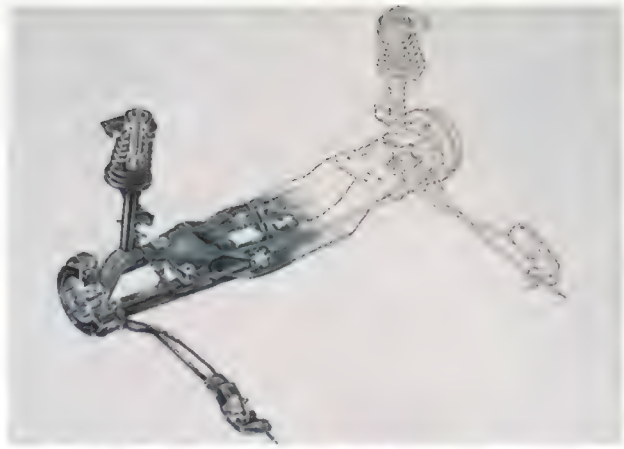

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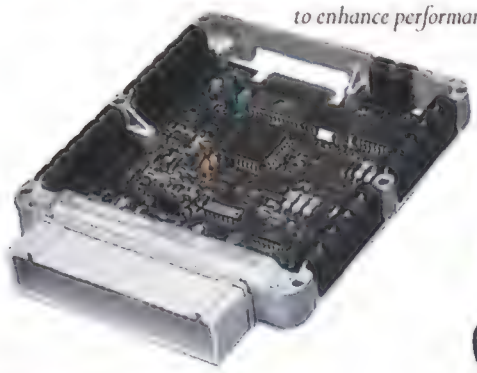

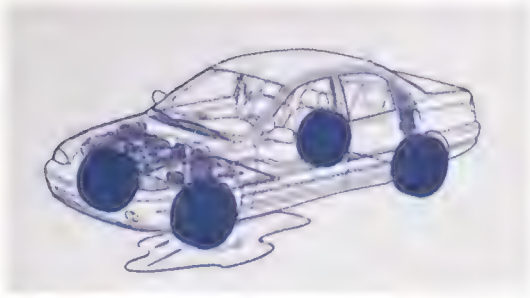

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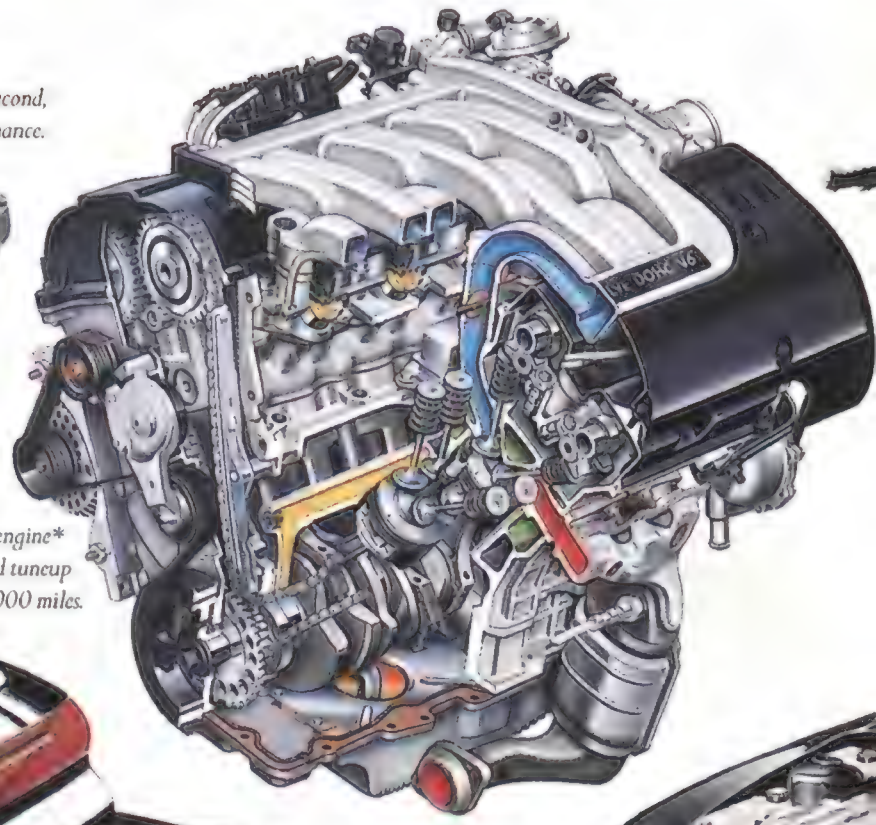

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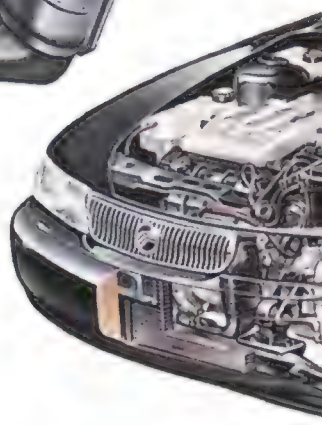

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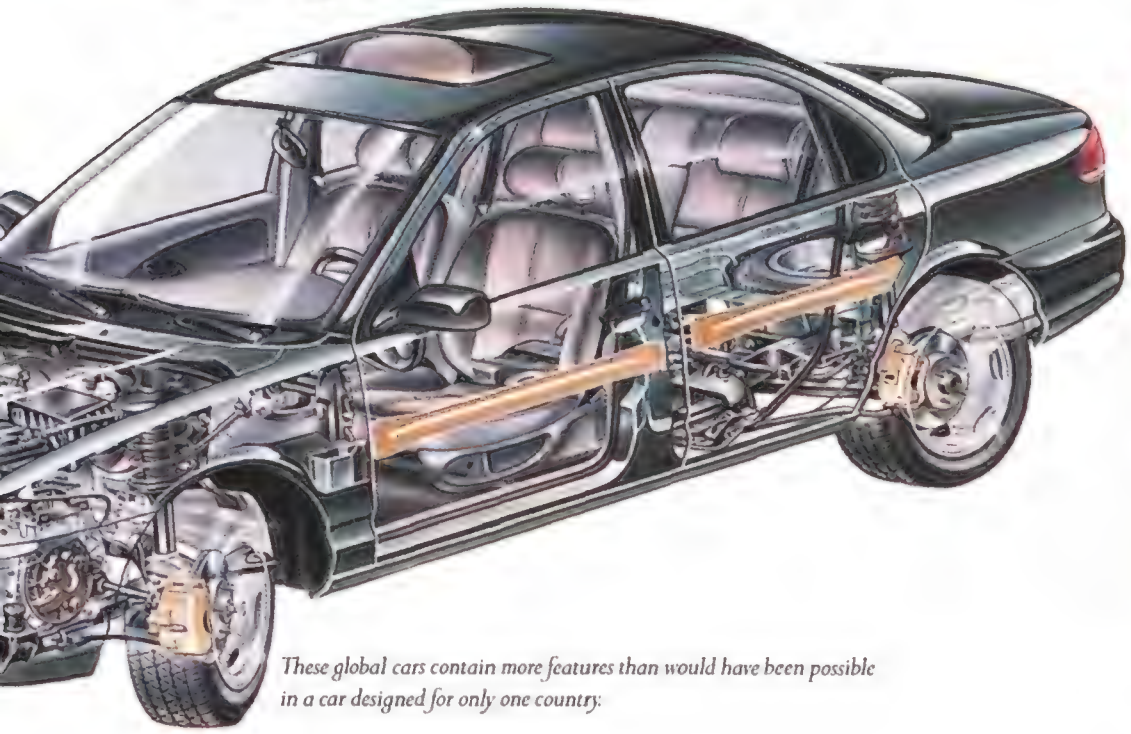

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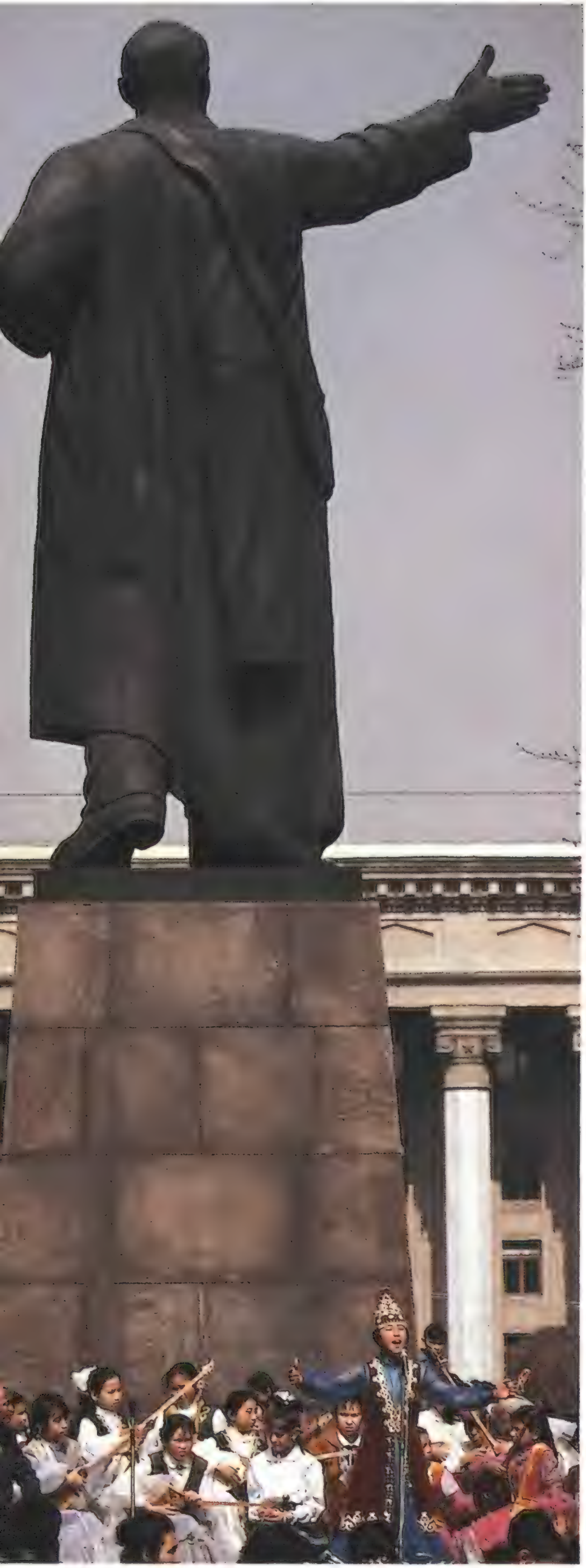

By Bruce Watson

The new Peace Corps steppes out– in Kazakhstan

These days volunteers are as likely to be teaching business techniques as brotherly love, but just being there is still what matters

From the Caspian Sea to China's mountainous west stretches a broad steppe of tundra and ice that has long been Asia's doormat. Since nomads first wandered here, conquering tribes have swept one another off these plains every century or so, leaving few monuments in their wake. Once home to Genghis Khan, the steppes of Kazakhstan have also hosted exiles, silk traders and Soviets. But in all their years of conquest and fire, they had never known anyone like Michelle Ostrander.

Shortly after she moved to Zhambyl last summer, Ostrander was interviewed on TV and radio, and in the newspaper. Soon total strangers began calling to talk to "the American."

"After I talked awhile and wanted to go," she recalled, "they'd say 'Don't hang up. You're the first American I've ever talked to.'" At School No. 8 in the gray, Soviet-planned city, people asked for "just a minute with the American." Others stopped her on the street to practice their English or ask a question in Russian or Kazakh. Ostrander had come to Kazakhstan not to conquer but to teach. Just 21 and a year out of Swarthmore College, she learned Kazakh instead of Russian out of respect for the native culture. But in the classroom her Western ways buck tradition. When she began putting desks in a circle instead of rigid rows, several teachers complained to the

Dwarfed by somber statue of Lenin, young musicians tune up for a joyful Kazakh New Year's celebration.

With students chiming in, Michelle Ostrander leads School No. 8's class in English in the city of Zhambyl. Kazakhs now promote their own language instead of Russian, but English is the favored foreign tongue.

principal, who said, "Of course she can do it. She's the American." A week later, Ostrander decided to put up a world map. The prime location–the front wall where her coteacher had hung a portrait of Karl Marx.

Ostrander is a member of the largest group of Americans now working in Kazakhstan. In Latin America it is called Cuerpo de Paz. In Swahili-speaking Africa it's Watu Wa Amani. But on the steppes it is known as Korpus Mira, the Peace Corps. In 1961, when the organization burst bright-eyed from the Kennedy Administration, Kazakhstan was the Soviet Union's spaceport, grain belt and nuclear-testing ground. Since then a world and a generation have passed, taking with them the Soviet Union itself, but not the idealism of the Peace Corps.

Last summer, 46 volunteers arrived in Almaty, Kazakhstan's tree-lined capital, beneath the saw-toothed Tien Shan mountains. During 12 weeks of training, they studied local schools and businesses, learned Russian or Kazakh, and ate sheep's head in the grand Kazakh tradition. Then they fanned out across a land once just a piece of the USSR, but as of 30 months ago an independent country larger than Western Europe. Their mission: to teach English, open small-business centers, and give Central Asia what Peter the Great long sought for Russia–a window on the West.

Whether fresh off a campus or on leave from a Fortune 500 corporation, Peace Corps volunteers are still different from the average American. Part-time adventurers, full-time optimists, they put careers and family on hold for two years, pack a bag and head for places that seldom make the evening news, like Mongolia and Burundi. Once "in country," they dive into a culture where "yes" doesn't always mean "yes," "no" can mean trouble or just "try again tomorrow," and tradition trumps progress.

As a battle-scarred Peace Corpsman (Costa Rica, 1985-87) I thought I knew the "Peace Corps experience." Along with occasional success and unforgettable friends, the Peace Corps meant mosquitoes, a scorching sun and the diseases Joseph Conrad called the "playful paw-strokes of the wilderness." But in the 1990s, the agency entered a new breed of "developing country," first behind the rusted Iron Curtain, then last year in the former Soviet Union, where 420 volunteers are now serving in 11 republics, from the Baltics to Vladivostok.

I had my doubts about these new ventures. Did countries with steel mills, ballet companies and nuclear weapons need the Peace Corps? Was altruism the same in a heated apartment as beneath a mosquito net? And so I journeyed halfway around the world to see the

Photographs by Gary Matoso

Old and new: ruffles and turbans in a traditional dance; modern aerobics class started with Peace Corps help.

new Peace Corps pit idealism against ice and ideology.

A stern, iron-black statue of Lenin stands outside the office of the Committee for Foreign Economic Relations in Taldy-Korgan. When Joyce Elferdink arrived in this city of granite on snow, she asked to photograph her supervisor, Valery Lazurin, beside the Soviet patron saint. Lazurin refused. Lenin statues still stand throughout Kazakhstan, but there are many ways to dethrone an idol. Inside, beyond Lenin's stern gaze, I found Lazurin surrounded by a half-dozen computers linked to the world through e-mail.

"We understand that a handful of Peace Corps volunteers can't solve all our problems," Lazurin said. "But we are learning from each other how to work together. Starting the foundations of a market economy, Peace Corps volunteers are helping us with the most important skills in business–learning the psychology of people, the foundations of economics, and how to link our economy with world markets."

During her first week on the job, Elferdink, a banker from Battle Creek, Michigan, politely suggested that the banking system might need overhauling. She doubted free enterprise would have many takers where banks lent money at 200 percent interest over a three-month term. Call it a hunch. Lazurin nodded, then politely asked if Elferdink would like to be the first Peace Corps volunteer in Siberia. Just a little ex-Soviet humor, he said, but there has been no more talk of banking reform. Instead, Elferdink is helping Lazurin compile databases on local businesses and trying to get grants from American companies for a children's hospital.

"I never thought I'd be a Peace Corps volunteer," the 46-year-old executive said. "I'm not an outdoors person; I couldn't live in a hut. But I was intrigued with the former Soviet Union, and when the Peace Corps opened up here, I applied. I got my invitation a year ago."

When their invitations arrive, most aspiring volunteers run to a map to find their assigned countries. But many bound for Kazakhstan couldn't find it on a map. Only the most modern atlases show this puzzle piece on the underbelly of Mother Russia. There it sits, rimmed by mountains, with no access to the open sea, remote enough to be a second Siberia. Dostoyevsky was exiled here in the 1850s. A revolution later, Trotsky was banished to Almaty. Nine-tenths of Kazakhstan is flat, unbroken steppe, ideal for nomads and their tentlike yurts but no welcome mat for Westerners. In summer the steppes are an inviting green, but in winter, the pure whiteness is broken only by the smokestacks of a grimy city or a village of gingerbread-sculpted houses reminis-

The author, who served in the Peace Corps in the '80s, writes often for SMITHSONIAN. *Among his subjects: Navajo Code Talkers and backyard fallout shelters.*

Nation's capital, Almaty, known as Alma-Ata when the USSR ran Kazakhstan, has a population of 1.5 million. Its president and parliament preside over a country ethnically divided and larger than Western Europe.

cent of a Chagall painting. When January winds blow, temperatures can get mean and Minnesotan, turning people into frozen bundles, each with a plume of breath rising above a fur hat as they scurry for shelter.

History has been as cruel as the climate. Following the hoofbeats of fleeing hordes, Russians pushed south, taking control of the region about 1850. After the Bolshevik Revolution, Soviets quashed a Kazakh independence movement. Stalin's collectivized agriculture starved and slaughtered 2.5 million Kazakhs, who had killed millions of livestock rather than surrender their herds to the state. Smelting plants polluted Kazakh cities. Irrigation projects drained the Aral Sea and fouled the waters with pesticides and fertilizers. And some 450 nuclear weapons tests left certain isolated areas of Kazakhstan with dangerous radiation levels.

At last a sovereign nation, Kazakhstan now has a chance, says its popular president, Nursultan Nazarbayev, "to rise from our knees." Among former Soviet republics, it is touted as a promised land. Kazakhs and Russians, each about 40 percent of the population, with a slight edge for the Kazakhs, live with a troubled truce. Kazakhs fill most of the government posts, fueling Russians' resentment but preempting the power struggles that tear at other former Soviet lands. Amid the present measure of political calm, hope springs from the country's oil and mineral reserves, thought to be among the world's largest. Already the young country has charted a peaceful course, closing its nuclear test site and sending its 1,400 nuclear warheads back to Russia. With only about 17 million people in a country four times the size of Texas, there is plenty of room to grow. But on gloomy days, Kazakhstan, its arteries hardened by bureaucracy, seems like a country 2 years old going on 72.

From the Peace Corps' small-business office in Almaty, married volunteers Lee Yerkes and Maria Kendro gaze out on a frozen "monument" to the new Kazakhstan. When they opened their office last summer, water gushed from a broken pipe on the lawn. Come January, nature plugged what plumbers hadn't gotten around to fixing. The billowing ice sculpture reminds the two Kansas City executives that business here more often follows the laws of inertia than the laws of economics.

"We're finding that it's not know-how people need most but help in developing confidence to move forward," Kendro told me. "You have to let them know it's all right to take the first step on their own. In the past, all the steps were ordered by the government." Several years after market forces brought McDonald's to Moscow, Kazakhstan is still largely state run. Western companies are tapping oil, peddling computers and selling Mercedes-Benzes, but free enterprise has yet to trickle down, even though about one-third of the country's largest enterprises are being privatized. Like the natives, Peace Corps volunteers shop in meager state stores that give off a scent of tea, where clerks tally charges with abacus beads. They live in gray apartment buildings lined up for blocks on end. They stand in long lines for bread and milk, and are paid ($125 a month) in *tenghe*, the new currency, which has lost 90 percent of its value since being issued in late 1993. Except for the babushkas selling cigarettes and gum on the street, only the ubiquitous kiosks promote free trade, offering whatever can be trucked in for a profit–vodka, cigarettes, candy, bootleg videos of American movies.

"Almost everyone would like to have a private business," said Ray Meng, a volunteer in Shymkent. "They see that Snickers bars, which come through private suppliers, are plentiful, while the state handles bread and cheese–and you can hardly get it. But they're not used to being responsible for budgets, profits, expenditures." Businessmen competing with state enterprises must also contend with the "Mafia." The term arises whenever train tickets suddenly sell out, kiosks are overturned or torched, or supplies bound for a factory vanish. And with prices soaring and life seeming, in the Russian term *bardak*, "out of control," nostalgia often outweighs optimism. "About half the people I meet want the old system back," Ostrander said. "They had food, jobs, their housing was taken care of. Now they honestly feel like they're being starved to death."

In Ostrander's classroom, Karl Marx's specter now haunts the students from the rear wall, peering from behind a plant. Hanging in front, where Marx used to be, is Ostrander's world map. On a Monday morning, having taken a 12-hour train ride from Almaty, Ostrander is on the job at 9.

"What did you do for Christmas?" she asks her eighth-graders. "Did you spend Christmas with your friends?"

One student asks about Ostrander's Christmas vaca-

Credit manager Chris Chatterton from Denver rides bus home in Zhambyl after a day spent helping locals set up business for making hemp and rope. Above, Laura Johnson, Ostrander and Haleh Hatami unwind.

tion, which included four days stuck in a Moscow airport waiting for a plane.

"Miss Michelle? Did you miss us? Did you want to come back?"

"Yes, I wanted to come back."

"Why?"

To their students, volunteers offer more than English; they are America in the flesh. In countries that have hosted the Peace Corps since the 1960s, Americans are no novelty, but on the steppes they are bridging generations of misunderstanding. Teacher Irina Naumova told me what these first Peace Corps volunteers mean to School No. 24 in Taldy-Korgan: "Under the Soviet regime, even we teachers of English had no chance to speak to Americans. Sometimes it was even a crime to make friends with foreigners. The policies of the state have changed greatly, and we have opened our hearts. Actually, our hearts were always open, but the government's wasn't." Last September, volunteers arrived ready to teach nouns, verbs, even slang. But when they pulled the old Soviet text from the shelves, many realized they would also have to teach political science. The book's slant on America seemed frozen in time. Lessons included lengthy passages on such things as a 1930s Young Communists march on Washington.

"I refused to use it," said Shanta Swezy, whose sister was a volunteer in Togo. Like other volunteers, Swezy makes up her own lessons. Her classroom at School No. 24, overlooking a Russian MIG placed in the playground as a monument to soldiers killed in Afghanistan, is lined with photographs of Sesame Street characters, American postcards and Norman Rockwell prints. Swezy's American curriculum has the full support of her supervisor, yet when she began teaching English on local TV, she fell into the cracks between Kazakhs and Russians. The long-suppressed Kazakh language is now the country's official tongue, but Russian still dominates almost everywhere. Kazakhs protested when Swezy's *English for Everyone* was broadcast instead of Kazakh lessons, and the show was quickly canceled.

"It was partly a feud between generations," Swezy said. "Young people really wanted English, but older people didn't see it as so important." After official Peace Corps intervention, the show went on again. Caught in the cultural crossfire, volunteers toe a tightrope, ignoring Russian remarks about Kazakhs and vice versa, befriending both groups. So far, the Kazakhs seem to be winning the cultural battle. Street names have been changed to honor Kazakh instead of Russian heroes. Kazakh ballads on TV eulogize nomadic warriors on horseback. Volunteers see few yurts, but dining in Kazakh homes, they must face down first the *kumis*, fermented mare's milk, then–the sheep's head.

In Costa Rica, I learned to loathe rice and beans. Breakfast: rice and beans with egg. Lunch: rice and beans with a vegetable. Dinner: rice and beans with a

They are all sharing a cheese, salami and carrot supper after a hard but happy day teaching English.

In provincial town of Taldy-Korgan, volunteer Shanta Swezy entertains a neighbor and her children at home.

Thriving example of free enterprise, kiosk deals in cigarettes, candy bars, gum, soft drinks, vodka and imported beer, as well as bootleg cassettes of American pop music.

side of beans and rice. But I never had to eat anything that stared back at me. "So far I've had three sheep's heads," Ostrander said. "Luckily, I never had to cut one, because I'm a woman." In the Kazakh tradition the most venerated guest, generally an older man, carves the sheep's head and serves pieces weighty with symbolism. The ears go to children so they will be more attentive. The palate is served to teachers to make them more gentle with students. And when all the pieces, except the eyes, are served, the bottles come out.

Volunteers call it "terrorist hospitality." Just a little Peace Corps humor, but they barely smile when recalling bottle after bottle of vodka for men, cognac for women. In Kazakhstan, drink is the glue of friendship. Refusing a toast is an insult to your host. "When I got here, I thought, 'Well, what's a few shots of vodka?'" said Chris Chatterton, a rugged Coloradan who goes snowboarding in the Tien Shan mountains. "I figured maybe we'd split a bottle with three or four people, no big deal. But here it's usually a bottle per person, straight shots. If you drink once, you're invited back and expected to drink again. You have to be tactful."

Ever resourceful, volunteers found ways to imbibe without insult or inebriation. One trick is to take a shot and spit it into a chaser cup. "You can empty it somewhere," one confesses. "Sometimes I'll say I'm a Baptist and don't drink, but there's a lot of persuasion and you usually have to take a couple of shots."

This, then, is the "toughest job you'll ever love." Families and friends see the Peace Corps digging wells or teaching agronomy, but much of the work is simply social. The agency has always had three goals. The first, and hardest, is sharing skills. In Costa Rica, I hiked to schools in tropical rain forests, teaching teachers to enrich their lessons beyond rote and recitation. The other goals–letting Americans mingle in the world and bring a part of it home–were fulfilled by every greeting on the street and every letter to a hometown.

"Do you like Madonna?" Ostrander asks her students.

"Yes, I like Madonna," each replies in turn.

"Do you like Whitney Houston?" Some do, some prefer Michael Jackson.

"Do you like Michael Jordan?"

"No, I like Shaquille O'Neal," one boy replies.

In the age of satellite TV and VCRs, Peace Corps volunteers' work includes battling a Golden Horde of celebrities invading the global village. Even in remote Kazakhstan, students watch American soap operas, NBA basketball, and MTV beaming *Beavis and Butt-Head* from Hong Kong. "All my students want to go to America to solve their problems," Ostrander said. "In America, they say, everyone is a millionaire. I'm from Florida so they all ask if I know characters they've seen on *Miami Vice.* I try to get them to be realistic. I say it's difficult to find work in America, that not everyone owns their own car, that some people live in the streets." This job of cultural attaché is not 9 to 5. In buses and bread lines, whenever the phone rings or strangers drop by to meet "the American," volunteers are on call. The constant immersion creates the job's chief occupational hazard–culture shock. No matter how well volunteers adapt, they are submerged in foreign music, "interesting" food, and the relentless tide of language all day, every day.

When I visited, volunteers had been working for five

THE NAPALI COAST, ISLAND OF KAUA'I

Photo: Bob Abraham

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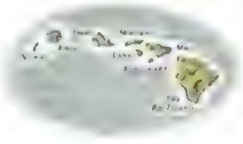

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Private sheep farms, suppressed by grandiose Soviet agricultural programs, represent hope for future.

months. Three had gone home, far below the worldwide "early termination" rate of 28 percent. The rest had begun to weigh the obstacles against their own hopes. "In September, we came to the office every day with a list of a dozen things we wanted to accomplish," Yerkes said. "At the end of the day, we'd gotten one thing done. Now we have a list, but no timetable."

Adjusting to the pace of life is harder in Kazakhstan than in older Peace Corps countries. In Chad or Sri Lanka, life is slowed by drought or monsoon, but here inertia is part of the political climate. As its Soviet inheritance, Kazakhstan lives with an imposed inefficiency strangled by suspicion of the individual, especially the foreigner. A volunteer's day goes something like this: up early. Visit the Ministry of Foreign Affairs to register for something Kafkaesque. *Nyet*, not possible today. Come back tomorrow. Stand in line for milk. Go to the train station to buy a ticket for next week. *Nyet*, no tickets. Tomorrow. Off to work for a few hours, then to the Ministry of Education to register for something cryptic. *Nyet*, not possible today. Try next week. Back to work, then home in the afternoon with few accomplishments and fewer explanations. "Volunteers get frustrated because they see the need to change the system at its highest level, but that's not what the Peace Corps is about," says Dan Riordan, Peace Corps administrative officer in Kazakhstan and my fellow volunteer in Costa Rica.

Along with culture shock, Kazakhstan has another common Peace Corps hurdle. Paul Burnore, the director in Kazakhstan, heard the charge as a volunteer in Thailand: "You're really a spy, aren't you?" But here in former Soviet territory, the suspicion plays like the plot of a bad spy novel. Riding the overnight train to Zhambyl, Burnore told me of his first meeting with the Kazakhstan government back in early 1993. "A lot of government officials are still old Communist Party members. One senior bureaucrat told us, 'We know exactly what you're doing here. You're an intelligence operation. You work through the CIA.'" With patience and sincerity, Burnore and his staff soothed suspicions, but setback followed setback. In Kokshetau near the Russian border, volunteers were reassigned after a government official found an old Soviet encyclopedia calling the Peace Corps subversive. "Authorities" have held volunteers' passports overnight and made them jump through hoops to get visas for their families.

"Our strategy in overcoming all this is to meet enough people and get enough press so that the Peace Corps is widely known," Burnore said. "Even though we're invited by the government, we really work for the local people, and they're the ones who have to get to know us. It won't be easy, but as long as people want us, we ought to be here." Burnore is working to expand his program to 150 volunteers in 20 cities, including dozens promoting environmental projects. Meanwhile, out on the steppes, volunteers were working to survive the winter.

Every Peace Corps country has one legendary site, a distant outpost whose name summons awe and dread. In Kazakhstan, it is Kostanai, a city of factories and iron smelters nearly as far north as Moscow and much colder. "For the first time I understood why penguins walk the way they do," said Jay Daniel with a drawl suggesting her warm Texas home. Volunteers came prepared for winter, but by November, families had to ship them more down-filled clothing. Even with thermal protection, little gets done in winter. "When the wind blows from the north, people just say, 'Let's make it another day,'" Daniel said. One volunteer suffered the first stages of frostbite on his cheeks. Others have been stranded by snow for a week, and one pair boarded the wrong plane out and ended up in Novosibirsk, Russia, not a place from which you'd send postcards to parents.

Spotting people hungry for change

Frostbite is a new "Peace Corps experience," but on the steppes volunteers worked much as I had in the jungles. One step forward, one back, retrench and try again. Success depends on learning to spot people hungry for change. You know them from a sympathetic nod or an insightful question. Even a few can make the difference between serving two years and going home early.

Ron Seibel had been a marine, then worked as a salesman for 30 years. In the Peace Corps he started a class called "Success in Business." After he explains how to turn "*nyet* profit into net profit," he whips out a Dale Carnegie classic and the lesson becomes "How to Win

Friends and Influence Kazakhs." Stalking the classroom in Taldy-Korgan, the burly, tattooed Seibel captivates a dozen Kazakh teens with Carnegie's business parables. "Now I already told you the first principles–don't criticize, don't condemn, don't complain. . . "

With his fur hat and brawny face, Seibel, 58, passes for native on the street (below). "They think I'm Georgian," he said, referring to the former Soviet republic. "Once I was talking to a woman at a bus stop and some guy said, 'You Georgians have no business being here.' I turned around and said, 'Hey, pal, I'm not from Georgia, I'm from Florida'–and we started talking."

Outside the winds howl and winter goes on. Seibel finishes his class and heads home to relax with Genghis Khan, who has returned to Kazakhstan in the video game Seibel brought from home. I take the long bus ride back to Almaty. As ice forms inside the windows, I realize the bus has no heat. Several times the fuel line freezes, and we stop, sit and stamp our feet to keep the blood flowing. Here in the numbing darkness it becomes painfully obvious that by Korpus Mira, or any other name, when the simplest tasks are mountainous, when volunteers serve as cultural middlemen, advisers and friends, then the Peace Corps has a job to do.

Having shaken off its old conquerors, Kazakhstan may evolve from a doormat into a tightly woven carpet, like the glorious Kazakh weaves sold for small fortunes here. Woven into its fabric are Kazakh traditions, Russian threads, the designs of Western business, global media and, finally, the Peace Corps. Last May, President Nazarbayev personally welcomed a second group of volunteers. His lavish praise of the Peace Corps made headline news around the country. Next day, all the volunteers met top government ministers in a gala reception. After a time of spinning its wheels in the snow, the Peace Corps was rooted in the rug called Kazakhstan.

"I thought I hated this place," said Angie Laswell, a volunteer from Springfield, Illinois, now teaching English in Almaty. "I went home for Christmas and I thought I'd die to be in a place where things worked logically. I got home and everything was really nice, but I was bored. My parents heard all my stories and didn't want me to come back, but I really wanted to. For the next year and a half, this is my home."

Sporting a fur hat, volunteer Ron Seibel from Largo, Florida, crunches his way to class in Taldy-Korgan.

In his business course, students read a revolutionary text titled: *How to Win Friends and Influence People.*

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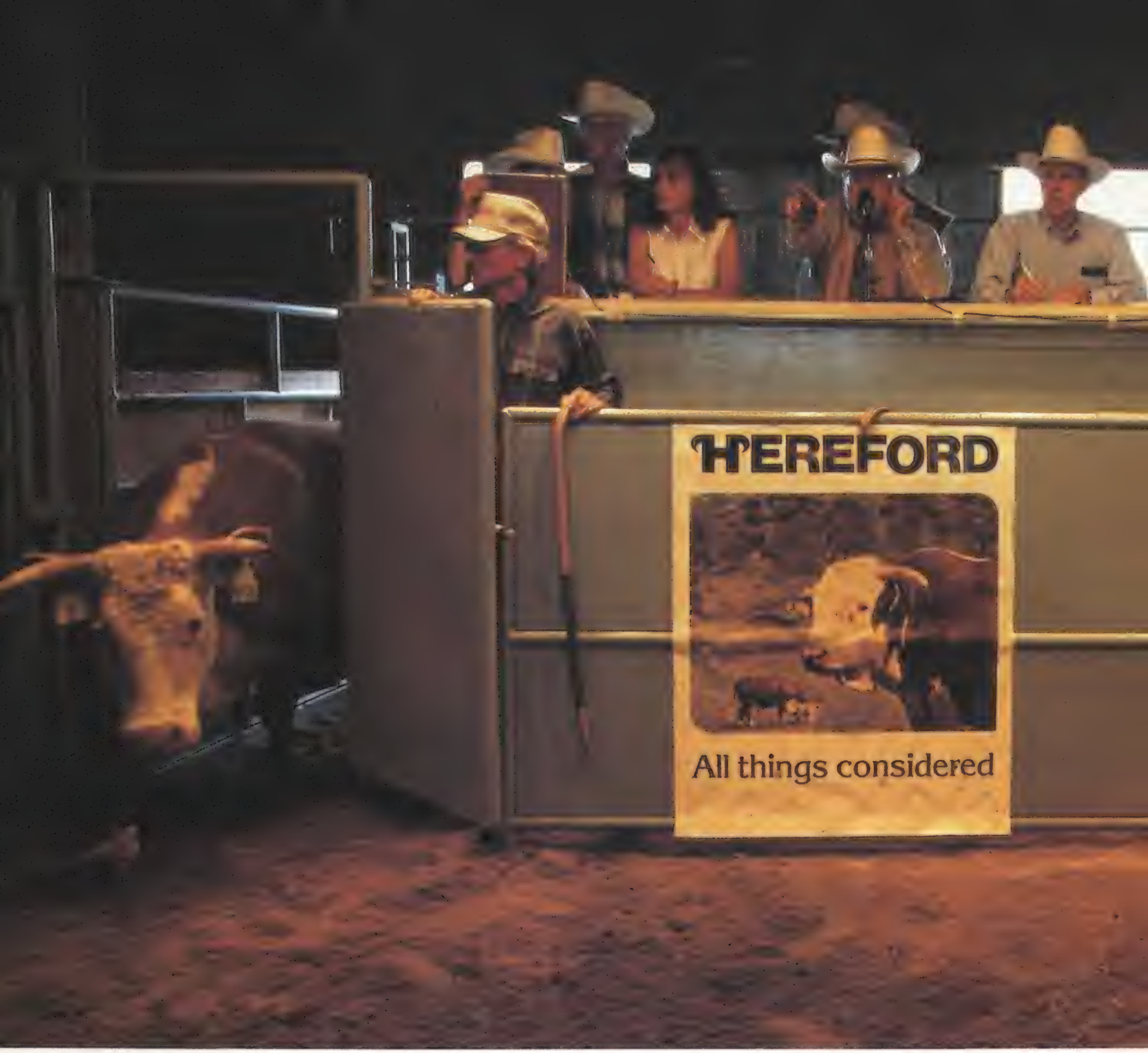

Bidding at a livestock auction in Clyde, Texas, gets off to a rolling start as a female Hereford enters ring.

By Doug Stewart

For the best show in the country, check out a farm auction

Guaranteed to send you home with a trunkful of treasures you hadn't known you wanted–and a rhythmic chant running through your head

Spotters positioned near caller Stanley Stout scan the audience for subtle bids, such as a tip of the hat.

Stanley Stout poked his fingers into the gut of the young Texan stretched out reluctantly on the table before him. Craning their necks for a view in the jam-packed auditorium were the Texan's 191 fellow students at the Missouri Auction School. Stout, a veteran pedigreed-livestock auctioneer from Linwood, Kansas, held his stubby fingers in place until satisfied that his charge was breathing correctly. "Exhale . . . That's right . . . Now *sell!*" To rising applause from the assembly, a thin, high-pitched monotone rose from the table: "10 dollar bid an' now 20 now 20 now 10 dollar bid an' now 20. . ."

The onlookers were on hand to master a peculiarly American art form, the art of the auction chant. Some 23 million people attend auctions in the United States every year, according to the National Auctioneers Association. Specialized auctions today sell not only cattle, antiques and high-priced art but also cameras, airplanes, used cars, book proposals, llamas, cobras, condos, dinosaur eggs, shopping malls and, in London recently, a 100-year-old ham. (Don't ask.) According to the NAA's promotional literature, "Selling at auction is the only means by which it is possible for you to receive more than you wanted for your property!" Or, more accurately, more than you dared ask, since you're letting the auctioneer do the asking. As for the widely believed corollary that auctiongoers risk being carried away and overbidding on an item, NAA executive vice president Joe Keefhaver says evenly, "You can never bid too much at an auction."

Whispers and cries of "Mine!"

Auctioneers have been trying to spread auction fever for millennia. Herodotus watched with curiosity around 450 B.C. as Babylonian bachelors formed circles to bid on unattached females in their midst–beginning with the most attractive maidens, who fetched the highest prices. (The later bidders were actually paid to claim the homelier women. Competing bachelors dropped out as the dowry was lowered.) Since then, auctions around the world have evolved to suit particular niches. In fish markets in Singapore and Manila, buyers crowd around the auctioneer and whisper their bids to him. At produce and flower auctions in the Netherlands, the asking price starts high and drops steadily lower as the audience sweats in silence; the first cry of "Mine!" wins.

In this country, no form of auction is more popular and, to some people, more mystifying than the Midwestern chanted auction. In farm and cattle country in the South and Midwest the auctioneer's rhythmic cry is as familiar a sound as a country fiddle. Auctions here are a central mode of business interaction, a major source of entertainment, and a social occasion that can pull an entire community under one roof. Make no mistake: high-priced, high-pressure sales don't occur only at swank New York auction houses like Christie's and Sotheby's. Livestock auctions may take place in a manure-scented milieu, but a pedigreed champion bull can fetch from three to four hundred thousand dollars in a few minutes, and that, as they say, ain't hay.

Midwestern auctioneers call what they do "singing" or "crying" a sale. They need to know a lot more than how to chant, but fast and musical bid-calling is indeed the key to their livelihood. "If you've got a chant down, you can sell it," says auctioneer Rob Olson of Salt Lake City, an instructor at the Missouri Auction School. With this

Photographs by Will van Overbeek

At the Missouri Auction School, student Jay Hendrix sells an imaginary cotton planter to his classmates; his chant is punctuated by shouts of "Yeah!" by spotter–here, played by coach Dwayne Craig–as bids are made.

goal in mind, 700 to 900 men and women of all ages come to Kansas City, "the Auction Capital of the World," to attend one of the intensive, nine-day courses that the school offers four times each year.

Founded in 1905, the Missouri Auction School is the oldest and largest such school in the country–"The Harvard of Auction Schools," as *Newsweek* once called it. Classes meet on the top floors of the turn-of-the-century Livestock Exchange Building, a huge and now mostly empty place of old yellow windowshades, heavy wooden doors with frosted-glass windows, and the occasional varnished longhorn skull mounted on a wall.

During a summer session, a few of the school's 21 instructors led the full class through a series of fast-paced tongue twisters ("Betty Botter bought some butter but she said this butter's bitter . . ."). The room pulsated as the students, in cowboy hats and baseball caps, sang along. Number drills followed, the crowd shouting in unison, "One, one, one na-corder, one na-corder, one na-half, one na-half, 75, 75, two, two, tuna corder, tuna corder. . ." Gesturing with alternating hands, they turned their heads as though acknowledging two competing bidders. The drills ingrain the sound of the ideal auction: a steady-as-a-drumbeat, two-bidder escalation of price to absurdly inflated heights.

The students, from all over the United States and Canada, came in a wide assortment of ages, shapes and hair lengths. Several dozen were women. Although many of the students planned to join a family auction business and already had a specialty, such as livestock or used cars, a number of them were here as part of a mid-career switch. "As a child, I just remember wanting to talk like an auctioneer," said Paul Harper, a bearded mental-health professional from Ohio in his late 30s. "I was mesmerized once by an auctioneer selling a week-old lamb to my grandfather in West Virginia. I remember thinking, 'How do they *talk* like that?'" Harper laughed to think he was finally going to find out.

The students would also get a crash course in advertising, appraising, avoiding lawsuits, and other business matters. The smoothest chant in the world won't help, for example, if poor advertising results in a property

Doug Stewart has reported on Jeeps (November 1992), architectural historian Carolyn Pitts (April 1993) and Consumer Reports *(September 1993).*

seller's worst nightmare: a single bidder showing up on auction day and buying that gleaming yacht for a dollar. To avoid this, sellers can set a floor on bidding in advance, but many auctioneers discourage these so-called "auctions with reserve." They know that the key to drawing a good crowd is the lure of the bargain, if not the outright steal.

The job of the auctioneer is to make these bargain hunters spend more than they planned. The technique they use to do this is deceptively simple. They call out two numbers over and over–the highest bid they've been offered so far and the bid they're now asking. But how they play with those numbers–singing them, stretching them, decorating them with nonsense syllables and filler words, interjecting jokes and exhortations ("Bid with your hearts, folks, not with your wallets") is what separates auctioneers from accountants.

The best chants are as hypnotic as the syncopated voice of an old-time bluegrass singer. Boyd Michael is an intense, wiry 69-year-old with a string tie and piercing eyes who's taught at the school for nearly 40 years. Like many of the other instructors, he can't carry a tune, strangely enough. Yet his auction chant, sung nonstop in a clear, twangy voice with the end of each phrase falling off in pitch, is pure poetry and rhythm:

25 dollar bid an' now 30 now 30
will ya gimme 30
30 dollar bid an' now 5
30 dollar
now 5
35
now 40 now 40 will ya gimme 40 now 40 will ya gimme 40
now 5
40 dollar now 5
will ya gimme 5, 45, now *50?*

Michael's chant is smooth and unhurried. "So many of the students try to go too fast right off the bat," he said during a break between classes. "They have to think faster than they talk, but they try to talk faster than they think, and that's why they get into trouble."

The problem was evident in one of the small classrooms on the third day of school. The student auctioneers clutched the lectern in a death grip as they struggled to keep their numbers straight while veteran instructor Dick Ireland did the bidding.

"Four-seventy-five. Who'll give me 500?" pleaded a middle-aged man in shorts and sneakers. A painful silence fell over the room.

"Yes!" Ireland shouted from beside the podium.

"Sold," said the student to general laughter.

When the next student, a young man in hand-tooled cowboy boots, began tripping over his numbers, rhythm be damned, Ireland interrupted with a little pep talk.

Look 'em in the eye and never point with your finger, Paul Dewees (at right) tells a student auctioneer.

Breathe from the diaphragm, instructs Stanley Stout; it takes lots of practice to deliver an unbroken chant.

Asking complete strangers for money, says teacher Monette Terry, must feel as easy as asking for the car keys.

"An auctioneer tries to get your attention by giving you something you'd sort of like to listen to, so you gotta make it *roll!* When you lose your rhythm, how do you get it back? You stop and listen for it again." Ireland demonstrated in pantomime, closing his eyes and silently moving his lips until his right knee started bouncing. Then he broke into his chant as though he were speaking in tongues. Earlier, before class, Ireland had talked so quietly he was hard to hear. Now he was a leg-slapping, arm-flapping wild man. Soon the cowboy up front was chanting along in perfect rhythm–"13 bid-an'-now 14, 14, 13 bid-an'-now 14, 14"–as Ireland, at his elbow, pounded the rickety podium like a war drum.

During a midday break, several of the instructors gathered to talk about why they talk the way they do. Most of them wore Western-style straw hats and held the honorary title of "Colonel," a tradition dating back to Civil War days when Union Army officers used auctions to dispose of war surplus.

"Clarity is always more important than speed," said Daryl Ball. "People have to know what you've got bid and what you're asking for." The runner-up in the 1983 world livestock auctioneering championship, Ball leaned back in his chair and gave an impromptu demonstration. The numbers were all clear, though the words in between, probably contractions of phrases like "I got a bid of," were gibberish: "30 daggadabum 30 30 biddina 5-a 5-a biddinum 40 40. . ." According to the NAA, auctioneers use filler words "to give the buyer time to think between bids," but a cynic would suspect the opposite is true. The late Ralph Cassady jr. of the University of California at Los Angeles, in his quasi-anthropological 1967 study *Auctions and Auctioneering*, wrote: "Chanting makes less obvious the sometimes long, quiet intervals between bids, thus obscuring the fact that the bidding is anything but lively."

Sometimes bidding is furious and quiet at the same time. The professional buyers who attend livestock auctions may be totally mute. "They'll just wink at you," said breathing-master Stanley Stout. "Or they'll tell you in advance, 'When I put my hat on, I'm done.' It's strange. Maybe they're worried someone else will think, 'If *he's* bidding on that animal, it must be a really good one.'" Yet the speed of these insider auctions is legendary. The late L. A. (Speed) Riggs, the auctioneer heard on the old Lucky Strike radio commercials, was once clocked selling tobacco at 784 words a minute, ten times the speed of normal conversation.

The school's instructors barely hide their disdain for the Eastern-style "talking chant," in which the auctioneer solicits bids in a conversational tone ("I'd like 300 dollars to begin the bidding. Two hundred? One-fifty? Thank you, ma'am"). Bing Carter, 77, a jowly, big-eared Kansan who's been crying auctions for 43 years, visited Australia on vacation a few years ago and found himself at a local sheep auction. Down Under, he discovered, auctioneers called out a single number over and over and waited for a raise. After 30 seconds, a buzzer sounded, and the last bidder won the pen of lambs. Introducing himself as an American auctioneer, Carter was invited up to the microphone. "I said, 'Now folks, we do things a bit different in America. If I go too fast, stop me.'" Then, Carter said, he started to sing: "'What can I get for 'em?' A man said, '18 dollars.' I said, '18 dollar

Missouri Auction School students Paul Wolf, Chris Floyd and Don Weichert get on-the-job training at the Gold River Auction. Toting a portable sound system, Floyd chants as the others spot for him.

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Following tradition, retiring Amish farmer Howard Miller (left) watches as his equipment is auctioned off outside Lagrange, Indiana; son inheriting farm must buy his own equipment.

now 19. *18* now 19. Will you give me 19. 19 *now* 20 now 40 now 60 now 80 now 21 now half now 22. . .'" Re-creating the moment, Carter's voice flew with an urgent, irresistible cadence. After the buzzer sounded at 23, "Some little ol' Australian guy, had a hat on the side of his head, he hollered out, 'By God, let's just back up and sell all mine over again!'"

On the bus ride back to their hotels each night, many of the auction-school students seemed to be talking quietly to themselves: more number drills. At a local burger joint one evening, one of the cockier students commandeered the public-address microphone and began soliciting bids on a freshly cooked hamburger. With 30 of his fellow students and a pair of instructors egging him on with bids, the burger sold for $27.

Like the other students, Carolyn Bronson had used practice tapes to work on her chants before school started. A stylish, soft-spoken Southern Californian, she'd pop in a tape whenever she climbed into her jeep to do errands. "My 2-year-old would sit in her car seat and say, 'Mommy, let's do chants.' Before I knew it, she could do 'Betty Botter' better than I could." Bronson was a mortgage banker by vocation, learning auctioneering in hopes of selling commercial real estate and running the occasional charity sale. Her friends, mostly white-collar professionals, looked askance at her decision to attend auction school, in Kansas City no less. "Their perception of auctioneers is the stereotype of a big-bellied person who wears all-polyester clothing and has a very low educational level." Her daughter wasn't burdened with the same prejudice. "When I explained to her where I was going for nine days, I said, 'Mommy is going away to work on her chant.' She just smiled. I got a better response from her than from most of my friends."

To hone their technique under fire, several carloads of student auctioneers headed one evening for Grover Calton's auction barn 12 miles outside of Lone Jack, Missouri. The establishment (since sold and now a cabinet shop) was an old metal barn filled with odds and ends: tractor seats, Liberace records and dinner bells. Colonel Calton delivered a folksy introduction in a deep, nasal twang: "I should mention that some of this stuff is old, and some of it is reproductions, and if you don't know the difference, you will after you buy a few pieces and then try to sell them."

As elderly farm couples and a few teenagers drifted in, the colonels-in-training lined up for turns at the microphone. Some paced and chanted outside, working up courage. All of them looked a little sick. Once the show got under way, a few sang as confidently as square-dance callers, but others abandoned any pretense of a rhythm. "You wanna bid two-and-a-half?" one man begged each of the front-row customers in turn, his eyebrows raised beseechingly. Nope, none of them did. Another novice, reacting to a flurry of bidding, snapped, "Wait a minute!" His plight was understandable: imagine an extemporaneous speaker who not only had to endure the shouts of persistent hecklers but in fact had to incorporate the heckling into his speech without missing a beat–and appear to do so gratefully.

Lone Jack may feel like the essence of rural America, but the most traditional form of country auction, the all-day farm sale, is an endangered species in the greater Kansas City area: suburban sprawl has set in. In other parts of the Midwest, farm auctions in recent years have become occasions for tears and anger, as banks foreclosed on overextended farmers. Says one longtime Iowa auctioneer, "The saddest sales I cry are the farm auctions." But in places like La Grange County in the quiet northeastern corner of Indiana, family farms remain intact and prosperous. This is Amish country, and farm auctions here are festive occasions.

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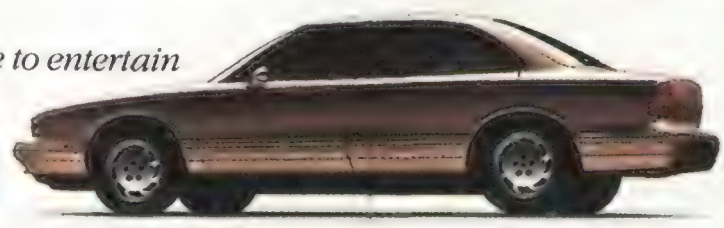

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"*She* knows!": a delighted Lovie Woldring of Hamilton, Michigan, picked up eight old bedsteads for two bucks.

On a frigid Saturday morning in Shipshewana last February, auctioneer Jerry Grogg of Grogg-Martin Auctioneers prepared to sell the personal property of farmer Enos Mullet and his wife, Polly–tractors, livestock, rocking chairs, quilts, butchering equipment, and enough tools and farm implements to baffle an unabridged-dictionary editor. Everything but the land and buildings was up for grabs.

"My boy that's taking over, he didn't want me to just turn it all over to him because he was afraid the other children wouldn't feel good about it," said Mullet, a genial, 53-year-old father of ten with a bushy beard and wide-brimmed brown hat. He wasn't retiring but rather moving across the road to run his welding shop full-time. "This way, they all have a chance. If LeRoy wants it, he'll just have to pay for it." Mullet figured he'd have to help out with the financing, but he wasn't worried. "If it goes cheap, why, that's good for my boys. If it's a lot, I told them, 'Hang in there–it's good for Dad!'"

Several young men were brushing snow from a flatbed wagon covered with miscellaneous items, including an old wooden crate clearly marked "junk." Grogg recalled that he once sold a tableful of snow-covered articles. "I got a better price for it that way," he laughed. Like most auctioneers, Grogg, 55, is good-humored and outgoing, but with an unpolished, earnest demeanor that's worlds apart from that of the proverbial silver-tongued salesman. Though he and the three auctioneers working for him were "English" (non-Amish), the firm was well respected and busily employed by the local Amish community.

"Ladies and gentlemen, gather round. We're ready to go!" Grogg called at 9 A.M. sharp. Sitting in the back of a camper-style pickup with a pair of loudspeakers mounted on the side, he explained the order of the sale: tools and miscellaneous first, then farm vehicles and machinery out in the field, followed by furniture and livestock. Then Grogg commenced singing–a fast, loud, animated chant punctuated with yelps and growls. A crowd of bearded Amish men gathered around the first flat-bed wagonload, eyeing hoof-trimmers, dehorners and other evil-looking devices. The women, in long black coats and white caps, hung back in clusters and watched attentively. Grogg worked quickly, selling items for $2 here, $5 there. He never begged; like any good auctioneer, he appeared utterly unconcerned about what each item brought, knowing that a fast gavel is a potent sales tool. (An extreme variation is to yell "Sold!" at the first bid, a guaranteed crowd waker-upper. Some auctioneers keep a cheap vase on hand and drop it when they feel a crowd's attention wandering.)

By midday, more than a hundred black buggies lined the rail fences, and close to a thousand people thronged the farm. Many if not most were here to visit, not to buy. The loudest sounds were the reverberating cries of the auctioneers, who were now working two "rings": inside a shed, the two youngest auctioneers had begun selling dishes, *National Geographics*, dartboards and thousands of other odds and ends, while behind the house Dallas Martin, an auctioneer for 17 years, sold machinery, using a beautiful, high-pitched, rolling chant. The bidding was active but well concealed–among the farmers, a lot of thumb-wiggling was going on, Grogg said later. The auctioneers sang everything, even announcements like, "I'm gonna sell that whole pile right here, the pipe and all that," which gave the proceedings some of the same oddness as grand opera.

A little bit of leg-pulling

In a barn that served as a lunchroom, three long-bearded men stood chatting next to a huge kerosene heater. "I saw your wife bidding on four glasses and a pitcher," a man leaning on a cane told another. "Last I heard, the bidding was up to $50." There were hearty guffaws all around. Jerry Grogg came in for a short breather. A one-time car mechanic, Grogg started crying auctions 33 years ago. "The first time I opened up a sale, I was so scared that I seen nobody out there," he said over a cup of hot cocoa. "If it wasn't for my dad catching bids, I wouldn't have seen a single one." Now, he boasted, he had a sixth sense for bids. "I've been an auctioneer long enough, I can see in a person's eyes that he wants to bid,

even if he hasn't bid, so sometimes I'll just take it and go on." Grogg's normally right about such things, apparently, though it's a knack they don't teach in auction school.

To the Amish in these parts, auctions are the only way to sell. A bearded young man named Ray Yutzy recalled that Dallas Martin, using a slowed-down chant, sold his house not long ago for $62,000. A newspaper ad earlier had yielded a high offer in the upper thirties. As to why, Yutzy speculated: "If a person makes me an offer privately, he's afraid he might spend too much, but if there's a person setting across the room who's bidding him up, he figures it's probably worth that much."

After lunch, Grogg rode down four long rows of farm vehicles, chanting nonstop from the back of his truck. For the afternoon's climax, several hundred men formed a large, tightly packed ring and, while young boys perched on fences for a better view, Mullet's nonbidding sons brought out heifers in groups of five, then teams of magnificent Belgian draft horses that had to duck to fit through the barn doors.

By 4 o'clock, nearly everything that could be sold had been sold. Carrying a microphone and portable speaker, Dallas Martin stepped into the lunchroom; the remaining crowd flowed in after him. He proceeded to sell the three kerosene burners, the tables and, finally, a 10-week-old puppy in a cardboard box, for which a young man happily paid $10. Hoarse and exhausted, the auctioneers then collapsed onto the just-sold benches and dug into leftover sandwiches and soup. The day's sale had brought in $106,000, which delighted everyone. The auctioneers' cut was upwards of 5 percent. "So Enos, are you happy?" Grogg asked as his host joined him at the table. Mullet nodded and revealed that someone actually paid $975 for a stove that he sells new at his welding shop for $100 less.

"Yup," said Jerry Grogg. "An auction'll do that."

Dallas Martin, with microphone, auctions off a barbed wire stretcher used for fencing to an interested crowd at Howard Miller's farm. The sale warmed up with tools, moved on to the highlights–vehicles and livestock.

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Children, Hughes noted, are not nearly so resistant to poetry as adults–an observation confirmed by the students (above) who illustrated his rediscovered verses.

A to Z: the happy rescue of a poet's antic alphabet

The publication of a neglected children's book will introduce a new generation to the puckish and playful side of Langston Hughes

In 1959, working from the crowded study in his Harlem apartment, Langston Hughes was, as ever, pursuing more projects than he could count. The distinguished poet was looking forward to the publication of his *Selected Poems*, compiling an anthology of African writers and trying his hand at an opera libretto. And he was writing for children, occasionally producing a manuscript, but often having to set it aside as he moved on to meet yet another publisher's pressing demands.

One of that year's creations was the final version of *The Sweet and Sour Animal Book*, a droll and dapper menagerie, celebrating in verse one creature for each letter of the alphabet, and touched with his signature wit: "What use / Is a goose / Except to quackle? / If a goose / Can't quackle / She's out of whackle." This autumn, Hughes' lost abecedarium is at last reaching readers in an enchanting edition published by Oxford University Press ($15.95). The jaunty illustrations, constituting a paper and clay bestiary, were created by students at the Harlem School of the Arts, located near the St. Nicholas Street apartment where Hughes once lived.

During his prodigiously productive career, Hughes had created a number of outstanding works for children. *The Dream Keeper*, a book of poems, had appeared in 1932. His inspired series of nonfiction, offering pioneering excursions into African-American culture, included *The First Book of Jazz* and *The First Book of Africa.* He also completed a number of manuscripts that did not see publication in his lifetime.

Much of this material, including the *Animal Book*, has remained among Hughes' papers, housed in the Beinecke Library at Yale after his death. An Oxford University Press editor, Nancy Toff, unearthed the text there last year. Her rediscovery will delight children and endure as a unique tribute to Hughes, a man not only noted for his genius but beloved for his humor and his humanity.
Kathleen Burke

Photographs by Henry Groskinsky

There was an ape
Who bought a cape
To wear when he went
Downtown.

The other apes
Who had no capes,
Said, "Look at that
Stuck-up clown!"

There was a pigeon,
A mighty flier,
His friends all called him
Pigeon McGuire.

But he perched upon
An electric wire–
And that was the end of
Pigeon McGuire!

There was a fish
With a greedy eye
Who darted toward
A big green fly.

Alas! That fly
Was bait on a hook!
So the fisherman took
The fish home to cook.

Ibis,

In case you have not heard,

Is a long-legged

Wading bird.

Happiest

Where fish are found,

He hates to set foot

On dry ground.

Zebra,

Zebra.

Which is right–

White on black–

Or black on white?

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mention that the '94 Suburban is big enough to seat nine passengers? Did we mention they'll be able to luxuriate in available custom leather seating surfaces? Or that Suburban can stow up to 149.5 cubic feet of "stuff" in its cargo space? We hope we didn't overlook anything. Then again, the '94 Suburban is pretty hard to overlook.

Chevy Suburban
LIKE A ROCK

By Barbara Holland

An exotic creature makes a useful change in careers

Llamas hum a lot, spit only rarely; now, besides backpacking and giving wool, they're into watching flocks by day and night

Jeff Lepore

Ranchers have found that marauding coyotes with a taste for lamb usually don't get past llama guards.

In a high valley in the Allegheny Mountains, on a 500-acre pasture rumpled with knobs and gullies and studded with thorny scrub, Smokey of Trubrook works hard to keep track of his sheep. Luckily the sheep seem just as eager to keep track of him, their friend and protector, not a sheepdog but a llama.

Llamas and sheep, quite mysteriously, take to one another at first meeting, with the llamas apparently looking on their woolly-headed charges as intellectually challenged family members. The sheep listen to their advice; the lambs trust them and play with them. If there's a storm, the llama takes the sheep to shelter. If there's a coyote, he kicks butt.

Smokey is new on the job. George and Peggy Bird raise sheep and cattle on this 1,100-acre farm that was George's father's, and they'd never had a predator problem until the spring of 1993, when they lost 20 lambs out of the year's 140.

"It wasn't a pretty sight," says Peggy. "Coyotes don't eat the whole lamb. Just the choicest bits."

Everyone lost lambs. Suddenly coyotes were everywhere in Highland, a western Virginia county surrounded by more than a million acres of national forest. A neighbor of the Birds' spent the spring camped out in her pasture, in a tent beside a barrel fire that blazed all night.

Smokey, a dignified but amiable 7-year-old, stands guard over sheep high in the mountains of Virginia.

Dr. Donna Matthews, a veterinarian in Luray, Virginia, who raises both sheep and llamas, says that by the turn of the century farmers in the Eastern states may have one of the worst predator problems they have ever known. "The forests here are a natural breeding ground for coyotes," says George Bird, "and they breed like fleas. Six pups to a litter, and they're good mothers; if she has six, she'll raise six."

A month after the lamb losses the Birds bought two llamas, Smokey and Count Dondi, one for each flock of ewes ("That's pronounced 'yoes' around here"). In the spring of 1994 losses were down to six, and there were signs that Dondi had chased off the attackers. George hopes word will spread through the coyote world.

To us, llamas may look like a prey species, but they don't seem to see themselves that way; their fastest-growing job market is predator control.

Iowa State University has been studying guard llamas in the West since 1981, and in 1993 issued a report by Prof. William Franklin that seems to have surprised even him. Over the past 15 years, as llamas became a flourishing hobby business, they were sometimes pastured with sheep for convenience, and their owners were astonished to find that fewer sheep and lambs were being lost.

Canids of any kind bring out the tiger in the llama, and coyotes and dogs account for 80 percent of sheep lost to predators. The figures are climbing too; in the United States, predators killed $69 million worth of sheep in 1985 and $83 million just two years later–in

Photographs by David Harp

theory adding to the price of lamb chops and woolens.

Heavy artillery has been brought to bear on the wily coyote: poisoning, shooting, trapping, aerial gunning, electric fencing, sterilization, and the digging out and gassing of coyote dens. All this is expensive, temporary, dangerous to other local creatures, often cruel and, to judge from the figures, completely useless. "We had a skilled trapper in the county," says George, "and he did trap one or two, but it isn't easy to trap a coyote. They're probably the most intelligent wild animals in the world. The reasonable thing to do is give up on trying to kill coyotes and concentrate on protecting lambs." Half the llama-owning sheep farmers interviewed in the Iowa study reported losses down to zero; the average was a drop from 26 a year to 8. One producer of purebred sheep has saved $20,000 a year since taking on a llama.

Llamas aren't passive guardians. Of the ranchers who had actually seen them encounter coyotes, dogs, foxes or bears, most said llamas would give an alarm call and walk or run toward the intruder and chase it; 21 percent saw them kick or paw it, and some reported actual kills.

Guard llamas are cheaper than guard dogs (SMITHSONIAN, April 1982). The dog may cost $400 and the llama $700, but because of disease and accident, only half the working dogs live to be 3 years old, and a year of that is spent in training. The llama may live to be 20, and its education lasts a few days at most. According to Dr. Matthews, only 40 percent of trained guard dogs turn out to be effective, while 95 percent of the llamas roll up their sleeves and start work immediately. Besides, the dogs need dog food every day; the llamas eat what sheep eat.

Politely, too. George says one of Smokey and Dondi's nicest traits is that they aren't greedy; when he brings a pail of feed out to the pasture, Smokey often stands patiently by while his charges gobble it up.

Having arisen, like all camelids, on the Central Plains of North America 40-some million years ago, the llama family sensibly moved south about 3 million years ago, while the camels proper were leaving for Asia and the Middle East. The South American branch consists of domesticated llamas, bred for carrying packs; the smaller alpacas, bred for wool; and the wild guanacos. Sometimes the whole group is called "lamas" with a single *l*, just to make life difficult.

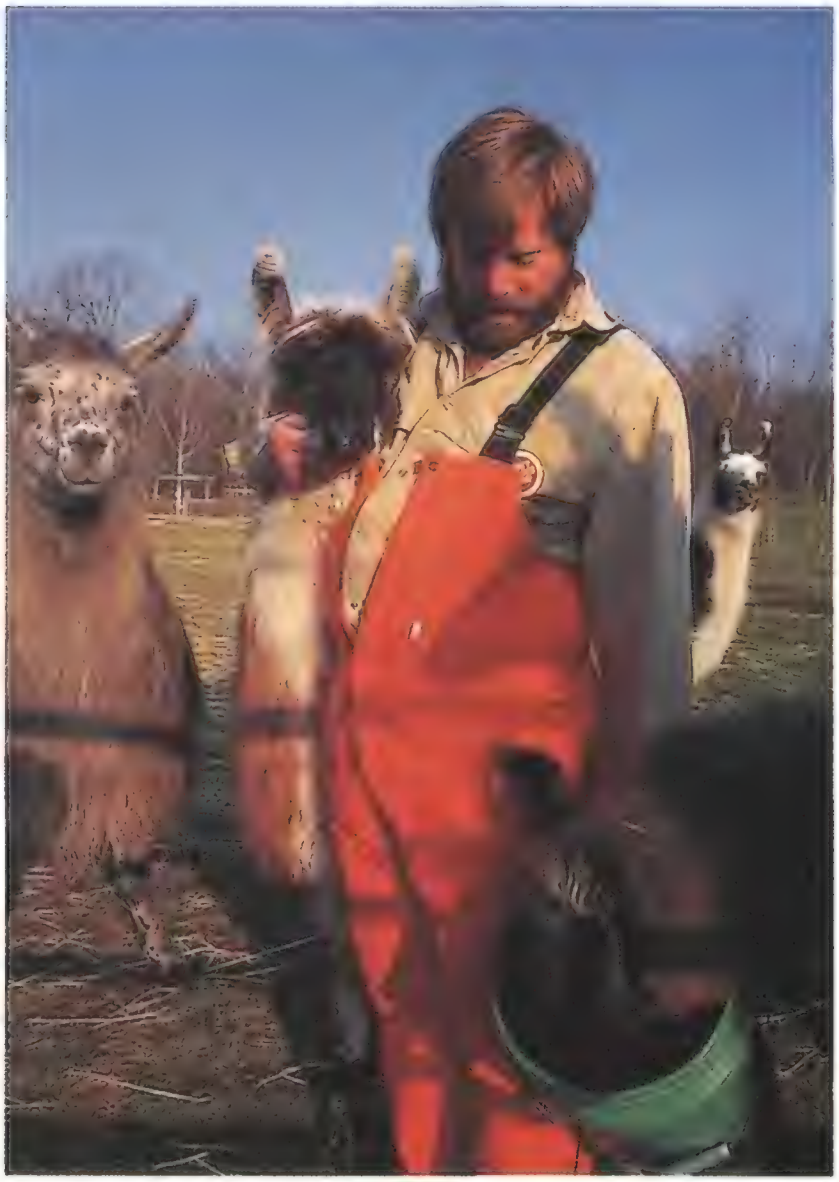
Some 4,000 to 5,000 years ago–or "from time immemorial," as the Encyclopedia Britannica puts it–people in the highlands of Peru were breeding and using the llama family in their cold, steep, unfarmable world, and trading their products for lowland groceries. In 1544 Augustin de Zarate wrote, "These sheep of Peru

Barbara Holland, author of a book about America's Presidents, last wrote for SMITHSONIAN *on the Adams family. Last fall she fell prey to the charm of llamas.*

Kidding around with Lucky Strike, Steve Dabkowski offers the famous llama stud a mouth-to-mouth carrot.

Karin King, Dabkowski's wife, bottle-feeds a 12-hour-old premature baby; mother, Nestle Crunch, keeps watch.

Lucky Strike is worth about $50,000; at his owners' farm in Round Hill, Virginia, his stud fee is $1,250.



Llamas mostly eat grass, but Dabkowski provides some Purina llama chow every evening as a special treat.

are large enough to serve as beasts of burden. The Spaniards used to ride them, and they would go four or five leagues a day . . . their wool is very good and fine . . . and the expense of their food is trifling, as a handful of maize suffices them, and they can go four or five days without water. Their flesh is as good as that of the fat sheep of Castile." In fact, our word for dried meat, "jerky," comes from *charqui*, a Quechua word for air-dried llama or alpaca steak.

Around the turn of this century llamas began trickling into the United States as a rich man's novelty, imported from Peru and Bolivia; William Randolph Hearst had llamas decorating his spread at San Simeon, California. Slowly the trickle became a stream, and by 1982 the International Llama Association had set up shop in Denver; today it has 2,500 members. More than 50,000 llamas have returned to their place of origin. Some guard livestock, some work on trail maintenance in national parks and forests, as well as carrying tents and food for trekkers. And some, the crême de la crême, the Dalai llamas, as it were, just lallygag around making more llamas.

Having first met and been charmed by llamas at the Loudoun County, Virginia, 4-H fair, where they are the focus of the area's fastest-growing club, I find myself dropping in on the annual conference of the Llama Association of the Mid-Atlantic States. More than 100 animals are crowded into the exhibition barn. They're all in strange quarters and surrounded by strangers, but the anxiety level is low. Every *Lama glama* seems calm but alert and interested, ears swiveling with instant attention. They are a group that high school teachers would die of joy to find in their classrooms. The young studs watch keenly as the lovely females go swaying by on leashes; one whose view I'm blocking cranes his neck rather pointedly to see around me, but he's nice about it. These are not raging bulls or rearing stallions but perfect gentlemen, apparently with the connoisseur's eye for a well-turned ankle, a soft fringe of eyelash.

"Praying" at the "criation"

I move to the next pen, which holds two pure whites and a bay with a sweeping white scarf. Their sweet hums ring musically as they discuss the passing scene, and I hum too. The bay glances at me from under his lashes and hums briefly in reply. Each llama, they say, has its own music–Peruvians call it "praying"–and a trekker groping in a dark mountain canyon for his own animal can pick it out by ear.

Steve Dabkowski of Loony Toon Llamas strolls the conference aisles with his newest *cria*, as the infants are called (unfortunately, this leads some breeders to call their birth "criation"). Only a week old, the llama looks like a tall, jointed wooden toy covered with fuzz, and

Llamas as golf caddies are now a notable feature at Talamore Course in Southern Pines, North Carolina. They don't give advice about clubs but calm golfers flailing away in sandtraps by looking imperturbable.

he's just as cheerful and outgoing as his elders. Unfrazzled, his mother glances over her shoulder from time to time and hums for him to stop gawking around and catch up, but he's too excited by the interesting world.

He's walking gold, this llama. His sire is Lucky Strike, son of Crazy Mountain Man, and a half-uncle of his recently sold for $75,000. These are not working llamas but llamas bred to be bred–and make their owners rich in the process.

Llama breeding is a government-sanctioned agricultural enterprise in some states, carrying a helpful agricultural tax break. It requires no rolling pastures, no silos or dairy barns, no pricey equipment, and no heavy lifting. Provided they have water, a bale of hay and available shade–llamas can die of heat stress–llamas can be left alone for several days. The stud is conscientious about his duties, and the female delivers her young efficiently in ten minutes to an hour or so, usually in the morning, so breeders lose no sleep. They wouldn't anyway; she doesn't need them.

Females start selling at around $3,500. The most undistinguished young male will bring $700. And with a well-bred stud, the breeder can sit back and sell services, also not labor-intensive. I pause to admire Padrino, a bay-and-white male nearly six feet tall at the curving tips of his ears. According to his public relations material, Padrino summers in Minnesota and winters in Harrisonburg, Virginia, and will gladly provide your female llama with an offspring for $1,500. Some breeders charge more. There are legendary studs–Doolittle, Catman, Crazy Mountain Man, the Fiduciary–whose costly amours suggest Secretariat.

Visitors are cross-examining the breeders closely and collecting business cards, feeling fortune at their fingertips. They hope to get in on the game before growing numbers of breeders bring the prices closer to earth. Lower prices will mean more llamas sold purely as pets–"companion animals," as llama-people call them, mindful of a llama's dignity. A llama can live happily in the suburban backyard, on an eighth of an acre, with only a three-sided run-in shed for shelter. As a lawn mower, the animal is fuel-efficient and environmentally friendly, nibbling gently with a split upper lip instead of top incisors, treading softly on two-toed feet with cushiony underpads.

The toilet habits of llamas are exemplary. Their nearly odorless droppings, called "beans," make excellent fertilizer and, if the cost of heating oil goes up any higher, could be burned for fuel here as they are in the Andes. Llamas in a field establish a latrine area and repair to it from birth, without fail. If you'd rather have your llama in the living room–one family's llama comes in to flop on the floor and watch television with the kids–it's quickly trained to use a litter box by adding a couple of beans to the litter. At a golf course in North Carolina llamas serve as caddies, and each hole has its designated toilet area to which the llamas discreetly retire while the golfers play the hole, then come back to stand at the ready.

How do you train a llama? Carrot-and-stick, reward-and-punishment, good-llama bad-llama? No. Llamas

have enormous self-respect and are quite immune to threats and blandishments. You train a llama by showing it how to do something that seems, to a llama, like an interesting thing to do–pulling a pony cart, for instance, steered by voice commands and a halter with neck-reins–and the llama, interested, learns it all at the first or second explanation and never forgets.

Luckily llamas like doing things with people, and almost everything interests them. It's part of their charm. This is an odd attitude in animals domesticated for millennia as burden bearers (they can carry packs or people of 50 to 120 pounds, up to one-quarter of their own weight), handy sacrifices to various gods, and producers of wool, meat and fuel. Llamas, presumably bred from the wild and now-endangered guanaco, were also, presumably, bred for the meekness, edibility and obedience that make a good domestic animal.

By all rights we should be looking at a pretty stolid, fatalistic creature here, a sort of primordial pack-saddled sheep without spunk or initiative. Instead we have something more like a long-legged cat, home-loving but independent, treating its owners with affable condescension, thinking up games to play in its spare time, enjoying a challenge, rejoicing in obstacle courses, and learning its assignments only when they look like fun.

People have been paying handsomely to have a llama purely for the pleasure of its company, but the breeders keep an anxious eye on prices already declining from the dizzying peak of a few years ago. They're exploring alternative sources of llama income. Wool, for instance. Back in the exhibition tent, a talk is in progress on preparing llama wool for weaving or knitting. (A sweater takes 16 ounces of raw wool, more properly called "hair" because of its molecular structure, but we needn't go into that. Either sheared off or combed out of the llama, it sells for up to $10 an ounce, not exactly a mass-market product.)

This wool doesn't shrink when washed

Shorn fleeces are displayed for us to judge on cleanliness, uniformity of fiber length, curliness and lightweight guard-hairs–heavy ones take dye badly and prickle the wearer of the finished product. To anyone who's ever regretted patting a sheep, this stuff feels wonderfully dry and unsticky by comparison. It's light and warm, sheds rain and snow, and comes in all the natural colors of llamas, which match those of horses. It rarely shrinks when washed and is virtually greaseless (the lanolin in sheep's wool accounts for up to 40 percent of its weight).

Wool is an automatic byproduct, two to four pounds a year per llama, and breeders have begun breeding for wool quality, hoping to expand the market beyond the crafts-and-hobbies world. But American wool-milling equipment isn't designed for delicate assignments, our labor costs are high and our llama supply is still too limited for mass production.

If the future of the $75,000 glamour llama looks less than limitless, the $700 utility llama enjoys a rising demand. In Masonville, Colorado, Stan Ebel owns 125 geldings and 75 females, and business has been growing for 15 years. One of his companies, Great Divide Llamas, breeds crias for soundness and strength rather than beauty. The other, Buckhorn Llama Company, trains the geldings for packing and leases them to recreational trekkers and government agencies.

The U.S. Forest Service and National Park Service are his best customers. For trail maintenance, there's nothing like a llama. "They're much the most cost-effective way to get back in there," Ebel says. "The services used

Carrying on traditional chores as beasts of burden, llamas serve as spritely packhorses on a mountain trek.

Antoinette Brewster, who breeds and raises camelids near Charlottesville, Virginia, nuzzles up to an alpaca named Morning Glory, just after a shearing. Little cousins of llamas, alpacas like this one are mainly raised for wool.

to use horses and mules, but they cut up the trail with their hooves, and when you have to make short stops and tie up your animals at trailside, they can really wreck the area. Besides, Park and Forest keep getting their budgets cut, so they use a lot of volunteers and summer help now. These people aren't experienced with stock. You need to know horses and mules to work with them. Send out a group of mules and a group of volunteers, likely one or the other of them won't come back. Llamas are easy to work with."

And they're easy to move around. Leasing mules and horses for trail work required leasing a horse trailer too, and plenty of paperwork. Throw a stock rack in the back of a pickup, and you can take llamas anywhere. Ebel llamas find work from New Mexico to Wyoming.

"There's just nothing else as useful in backcountry," Ebel says. "Up on Long's Peak–that's 14,000 feet high–in Rocky Mountain National Park, the Park Service has set up some toilets. How do you think they carry the stuff out when they empty them?" Ebel also works his own llamas, opening new trails under government contract. As a sideline, he makes Christmas wreaths from "Doug' fir" collected high up on the north slopes of the Rockies and hauled out by his humming work teams. "Anywhere you can't use a vehicle, you need a llama," he says firmly.

Even the tamer East has places "back in there." LeConte Lodge, in the Great Smoky Mountains, is attached to the world only by a 5.5-mile footpath. Its guests leave their cars at the trailhead and backpack their clothes and toothbrushes to the lodge. Basic supplies are airlifted in at the beginning of the season, but everything else moves by llama.

LeConte used to use horses, but the Park Service put a stop to that in the early 1980s. Now, three times a week, six or seven llamas from their herd of a dozen pad softly up the trail bringing clean laundry and fresh food and taking away the dirty sheets and garbage. Guests are charmed and time their visits to coincide with llamas.

Recreational trekking may not seem like essential industry in these hard-nosed times, but if people can travel harmlessly into our public wild places, they're less likely to press for invasive access, especially paved roads and parking lots. Trekking with llamas, long established in the West, is moving East.

For nine years Judy Fee of Rolling Thunder Farm in Valle Crucis, North Carolina, took trekkers into the Smokies and up to the Mt. Rogers National Recreation Area, Virginia's highest ground. With breeding and training taking up more of her time, she now refers callers to Avalon or Windsong llama treks, near Asheville, which visit Pisgah National Forests for one-day luxury picnics or two- to four-day camping trips.

This is no Spartan recreation. For those who feel that backpacking with tent and trail mix is more work than play, these jaunts sound deliriously like the fall of Rome, with llamas carrying fresh food, cheeses, wines and more than all the comforts of home. At base camps up in the crest zone, there's grass for grazing, and llamas bring water from the springs. Afterward, they take out the garbage and the empty wine bottles. I asked Fee about the bear-versus-llama factor, and she said that in her experience the llama always wins. "Llamas are naturally curious, and they don't spook easily. There's an encounter, and everything's suspended for a minute while the bear and the llama stare at each other, and then the

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Crossing alert is a sign of the times in Virginia, but clever llamas mostly steer clear of automobiles.

bear looks flustered and turns around and leaves. Llamas are pretty cool about predators."

At the Mid-Atlantic llama conference, I stand at the barn doorway during a sudden thunderstorm, talking to John Mallon, who says he's earned his living for 14 years as a llama consultant and trainer, a profession never suggested by his high school guidance counselor. He has an 800 number, and for about $25 the bewildered can consult him on such matters as llama behavior and training, upgrading the herd, choosing bloodlines and explaining it all to the IRS.

I ask him what advice the panic-stricken llama owner needs. "Mostly not to worry," he says. "Some people tend to overmanage them. Llamas don't like being fussed over. In general, llamas can take care of themselves."

Mallon drives around the countryside in his minivan, usually with a couple of llamas in back. When they need to make a pit stop, they hum. If he ignores them, they hum more and more insistently until he pulls off the road and lets them out. "It attracts some attention," he drawls. "Trucks roaring by, man by the side of the road watching a couple of llamas pee."

Several weeks after the conference, I track down Steve Dabkowski at his Loony Toon llamasery in Virginia's Loudoun County. He's a cheerful, mellow chap, clearly of the non-meddling temperament considered right for llamas, and just back from a trip to Wisconsin to check out a herd-reduction sale. He came home empty-handed but pleased with the prices, since this was the bloodline of Lucky Strike, the stud of his 13-llama herd. Males sold for an average of $11,600, females, $14,800. It will be a while before Steve and his wife, Karin, have to peddle llama-fur sweaters on street corners.

There's a pleasant humming as we go in the gate, and I get sniffed and kissed by llamas of all colors and ages. The two youngest, both already sold, consider my knees; as I reach to pat them something warm whuffles in my ear, and I jump back into the soft chest of a llama.

"That's Cocoa-Puff," says Steve. "She's the friendliest, you can't get rid of her. Every llama's different, they're individuals, and nobody can change a llama. That gelding out there in the field, for instance, he's standoffish. He was one of the first pair we bought, and he never really warmed up. That's one of the great things about Lucky; all his offspring are gentle and friendly, real people-llamas. The sire is the important factor in disposition. And we believe disposition is just as important as conformation."

Lucky is a big black-trimmed bay with an aristocratic profile. He takes an interest in a white female, and to Steve's surprise she lies down for him. "I thought she was bred already. I guess not." As Lucky buckles down to his job, a tawny female considers the scene over the fence and spits at Lucky contemptuously, meaning, Steve says, that she's already bred and has no further use for the likes of him. De Zarate, our 16th-century correspondent, wrote, "When there is a man on one of them, if the beast is tired and urged to go on, he turns his head around and discharges his saliva, which has an unpleasant odor, into the rider's face."

This seems reasonable enough, unless it was a very small man indeed. I ask about spitting at people. Steve says they don't, or only if they're seriously teased or annoyed, which would include, I'd imagine, being saddled with one of Zarate's husky Spaniards. "All camelids spit, but llamas only spit to protect their food, or to tell males they aren't interested, or sometimes if they're hot."

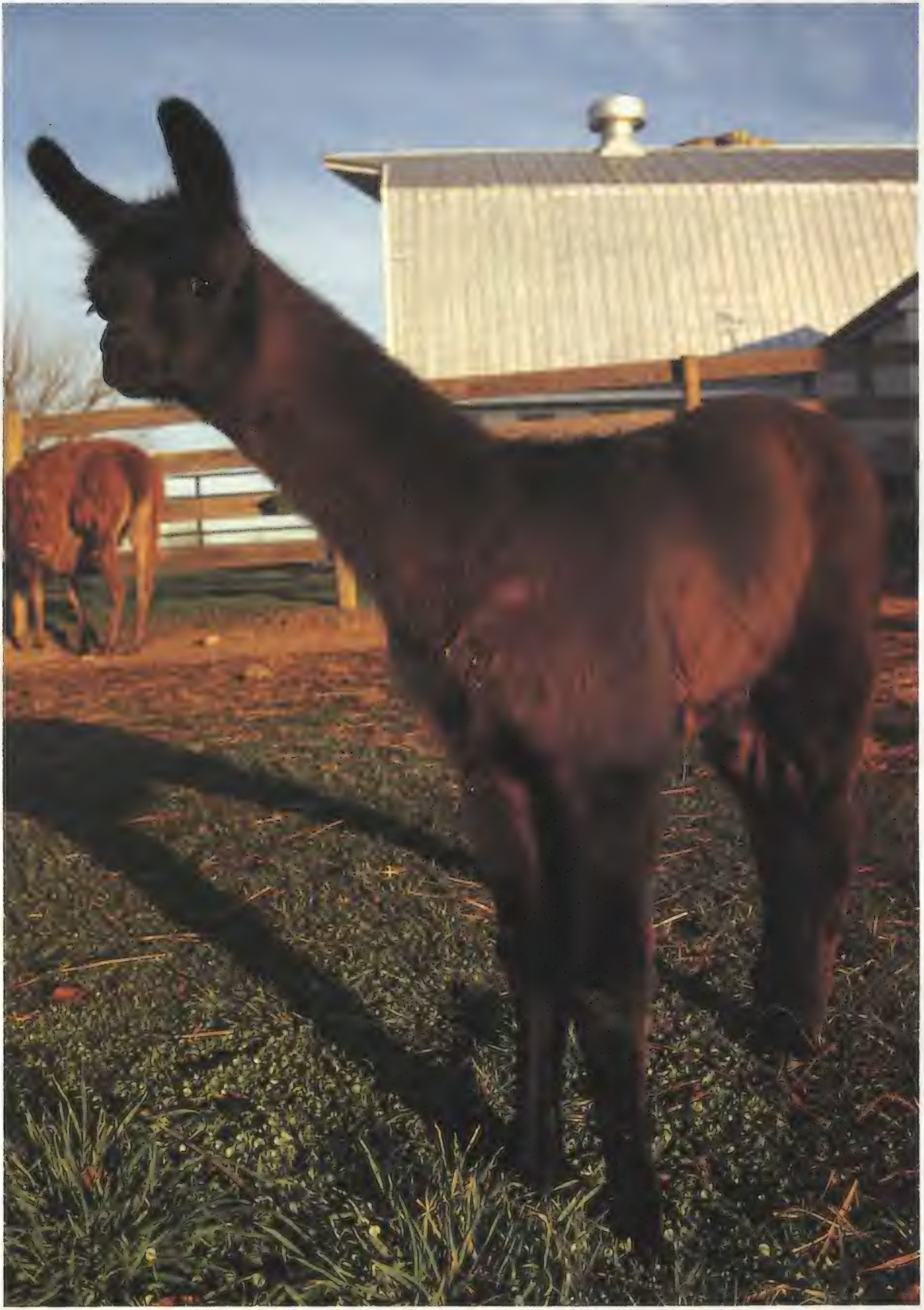
We lean on the fence and watch Lucky performing his duties. It takes 350 days from conception for a llama to give birth to her furry gold mine, but the cria arrives wide awake and ready for the interesting world. Steve has just halter-trained his two newest; one took five minutes to learn, the other, three.

"They're all calm now," Steve says, "but at dusk, when it cools off, or if there's a full moon, they go crazy. They chase each other and run around pronging. You've seen antelopes? That stiff-legged bounce? Llamas do it for fun. Karin and I come down to watch in the evenings."

Finished, Lucky joins us at the fence, his soft hair blowing like a shampoo commercial, and Steve nuzzles him affectionately.

As far as we know, the llama family was the only domesticated livestock in the New World before Europeans hit the shores. Small wonder. Who could ask for anything more?

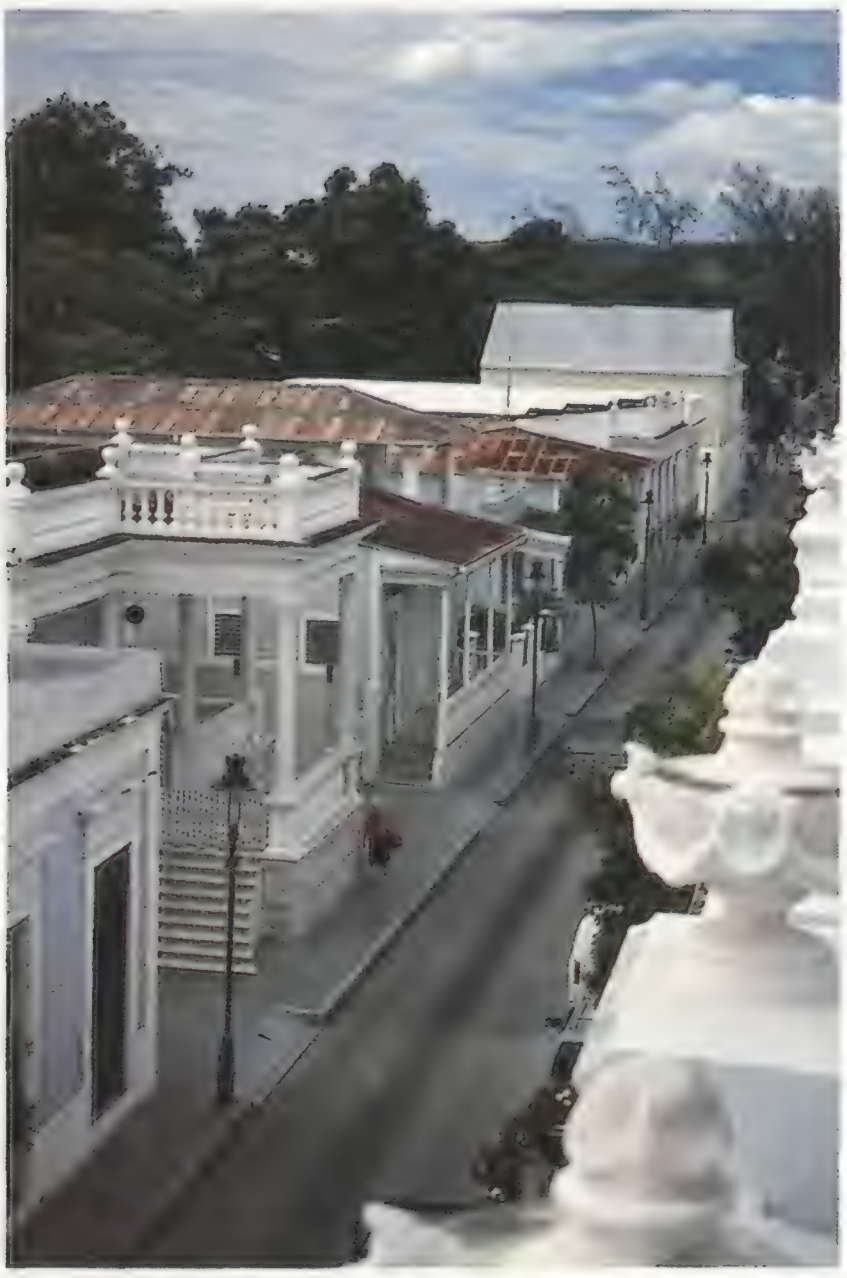
At Rolls Adventure in Fork, Maryland, a 2-week-old llama gives its new world a curious and playful look.



By Jolee Edmondson

An elegant city in Puerto Rico that time almost forgot

One of the most cosmopolitan crossroads of the Caribbean during the 19th century, Ponce is being coaxed to life after a long slumber



On a hot, humid day two years ago, 33-year-old Magda Bardina knelt in the corner room of an exquisite but decrepit residence, Casa Villaronga, and patiently scraped the paint–layer by layer–off the wall. Her goal: to determine the wall's color in 1911, the year the house was built. The large open window above her head, its wooden shutters thrown wide to let in the breeze, framed the twin towers of the cathedral in Plaza de las Delicias, a block away in the center of the old city of Ponce, Puerto Rico. As an architecture student at the University of Puerto Rico in San Juan, Bardina had loved to get out to job sites and get her hands dirty, which is a good thing given what she was doing that day and, indeed, has been doing for the past six years. To date, Bardina has determined the colors for the restoration of more than 400 buildings in the heart of Ponce's historic district, a 66-block area that fans out from the old plaza.

The restoration of Casa Villaronga is now almost complete, and Alfredo Wiechers, who designed the house, has become Bardina's favorite Puerto Rican architect. But she and her colleagues didn't learn about Wiechers at the university; their education about the architecture of Ponce has been strictly hands-on.

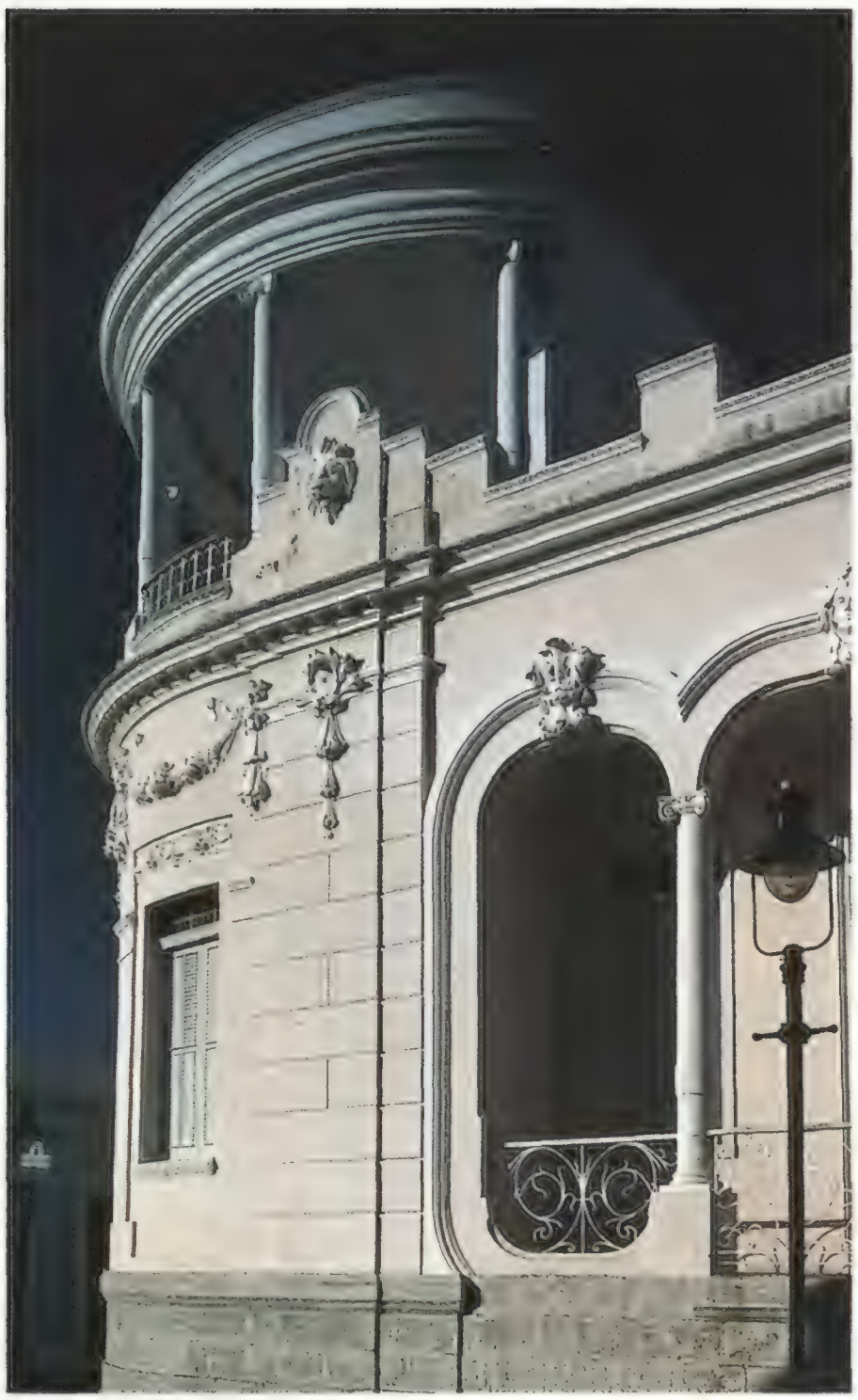
In fact, when Bardina was growing up in San Juan, what she knew of Ponce–on the opposite coast, with the island's mountainous backbone in between–didn't inspire the urge to visit. The same was true for visitors from outside Puerto Rico. Although the island has long been a popular destination for tourists, nearly all stayed in San Juan, with its old city and casinos, or headed for the sparkling beach resorts that ring the island. Only a decade ago, Puerto Rico's second-largest city was a grimy, dilapidated, crime-infested shell of its former splendid self, its fine old buildings sinking into oblivion along with the architects who had created them. Many of the structures had been demolished by owners who couldn't afford their upkeep; the city had a bombed-out look. Locals laughingly called the historic district the "hysteric zone."

Then, in 1985, Governor Rafael Hernández Colón, a native Ponceño, came to the rescue. By executive order he initiated a staggeringly ambitious $600 million program titled "Ponce en Marcha" (Ponce on the March), aimed primarily at developing an urban alternative to the congested, omnipotent capital of San Juan and specifically at restoring Ponce's tumbledown historic center. A vast, farsighted master plan was conceived for the city, unprecedented on an island being strangled by helter-skelter sprawl.

More than 400 buildings in Ponce's historic center have been restored since 1988, including homes along Calle Reina (left), Fox Delicias Theater (opposite).

Photographs by Macduff Everton

Puerto Rico's pearl of the south



Casa Villaronga, inspired by architecture of Barcelona, was a 1911 design by native-born Alfredo Wiechers.

The prospect of rebirth filled Ponceños with well-founded pride. From 1820 to 1920, their city was the belle of Puerto Rico, a vital, affluent port brimming with architects, painters, musicians, writers, scholars and politicians who created a cultural magnet and championed revolt against the heavy-handed Spanish government. A past like that is hard to shake.

While Ponce prepared to rise again, other municipalities cried foul over the deluge of funds into only one city on the small island. Half the size of New Jersey, located some 1,000 miles southeast of the tip of Florida, Puerto Rico–a commonwealth associated with the United States–spills over with ragged towns that could have used a slice of the Ponce en Marcha pie. But Hernández Colón and others argued that the island needed more balance. "Everything and everyone has been concentrated in San Juan," says Ilia Sánchez, 37, the cool, sophisticated, no-nonsense coordinator of Ponce en Marcha, who has an architectural firm in San Juan. "We needed to establish another metropolitan area. All the towns around Ponce will benefit because of its revitalization."

As controversy swirled, the city went under the knife. First, its desperately sagging infrastructure was overhauled. Roads were rebuilt; unsightly power lines were buried; rotted, 100-year-old water pipes were replaced; a $200 million highway system was constructed around the city. Ultimately, the Institute of Puerto Rican Culture, charged with spearheading Ponce's historic-district restoration, galvanized the talents of young architects. "I know this sounds discriminatory," says erudite, intense Javier Bonnin, 35, who was the first resident architect at the Ponce branch of the Institute, "but we wanted new blood for what we perceived as a progressive program."

A native son's vision for Ponce

Bonnin, a born-and-bred Ponceño who now oversees the city's master plan, is habitually in his small office in the historic district, often carrying on a rapid-fire phone conversation. His desk is cluttered with vintage photographs of Ponce in its prime. Dominating the room is a vibrantly colored floor-to-ceiling zoning map. On another wall hangs a large aerial shot of the city. Reed-thin and quick, a chain-smoker with wire-rimmed glasses perched on his nose, he relishes fervent discussion about his vision of Ponce–the wharfside warehouses he'd like to see converted into restaurants and shops, and a promenade to link the forgotten oceanfront with the historic district.

A few years ago, after receiving his master's degree in architecture from the Georgia Institute of Technology, Bonnin almost followed the beaten path of bright, young Puerto Ricans: a job in the States. "It was a big dilemma," he reflects, peering through his office win-

The neoclassical Casa Armstrong-Poventud, built in 1901, is among the many recently restored buildings that face Plaza de las Delicias. It houses the regional offices of the Institute of Puerto Rican Culture.

dow at a decidedly Spanish courtyard. "I had all of my friends and a job lined up in Atlanta, but I felt that I had to come back. I have always criticized the big exodus from the island–especially from the smaller towns–to the States. I think we have an obligation to do something in our own country. I didn't know what I was coming back to, but I had to return." After a year at a private architectural firm in Ponce, he was hired by the Institute of Culture, which had just set up an office there. By 1988, he had assembled a 13-member team, including Magda Bardina, to study what needed to be done in the historic district. That study prompted zoning changes and guidelines for the overall restoration.

The architects wasted no time. Beyond the supervising of individual building renovations, they ingeniously integrated contemporary buildings with the old by applying traditional touches. In fact, the group has influenced everything that affects the appearance of the old city, right down to the design of sidewalk flower-vending carts and the positioning of manhole covers.

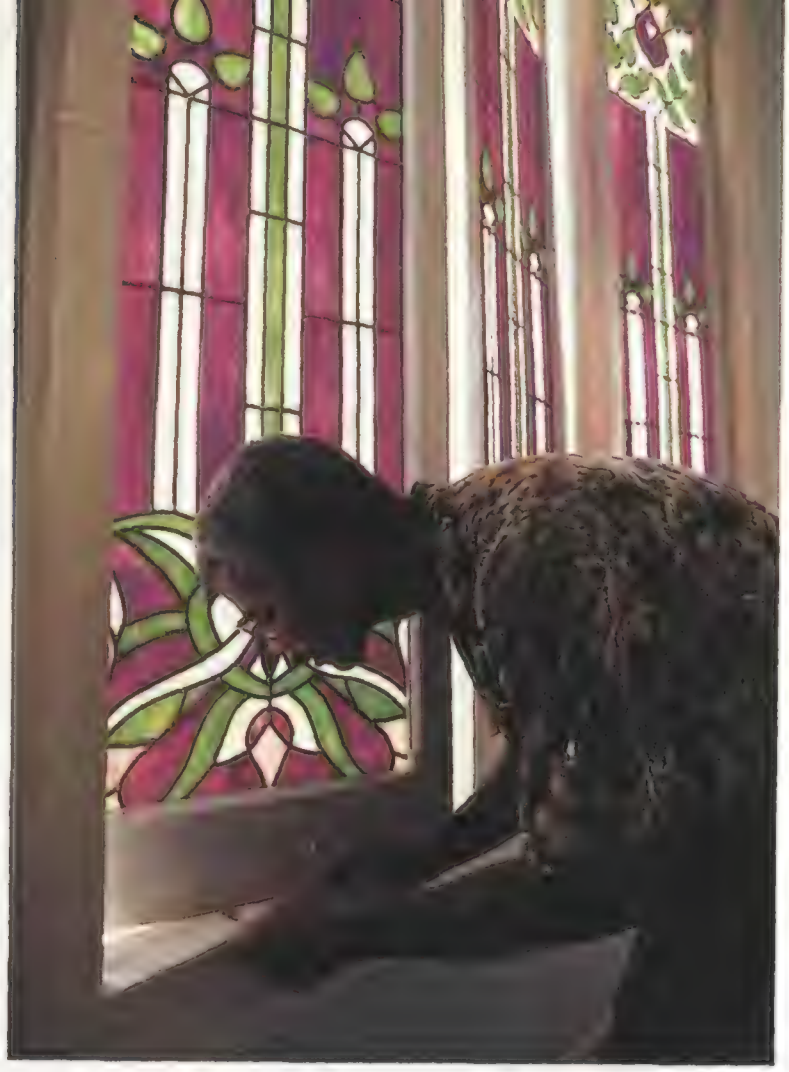
Bardina, who supervises the nitty-gritty of restoration, from approving construction contracts to enforcing the use of proper materials and techniques, discerned early on–by peeling paint layers–that the original colors of many of the historic district buildings were pastel. She selected the frappé hues they now are washed in. That was the easy part. For Bardina, whose sparkling eyes and quick wit belie her authority, the real challenge was convincing shop owners to conform to the new architectural guidelines. Retailers around the plaza had long done their own thing; large, plate-glass windows, accented by gaudy signs, had replaced the old facades. Incentives were offered, including tax exemptions, low-interest loans, free labor and design consultation. But persuasion proved to be of paramount importance. "We could not force people to go along with us," says Bardina. "In the beginning, we went door-to-door and held meetings and public hearings. People got to know us."

Many merchants resisted at first, but recognizing that restoration could lure tourists, they eventually joined the effort. Some covered costs themselves, while cooperating closely with Ponce en Marcha staff to make sure they met the guidelines. Lupita's Restaurant, two blocks from the plaza, is a case in point. "I worked with them from beginning to end," says staff architect Mabel Baiges. Compromises were struck. On the facade, they could advertise only on the awning; but inside the courtyard, they could hang as many pennants and signs as they wanted, which they have done without restraint. Likewise, the original walls with arched doorways had to

Jolee Edmondson, a freelance writer who lives in Alexandria, Virginia, has contributed to Elle, Bon Appetit, Golf Digest *and other publications.*

Beauty in details: sculpted seahorses romp atop Inland Telegraph building.

Sporting vibrant hues, an empty warehouse awaits renewal of Ponce's waterfront.



Gualberto Cruz Sánchez measures fit of stained-glass windows at Casa Serrallés.

With understated finesse, a side window of Casa Salazar graces adjacent pathway.

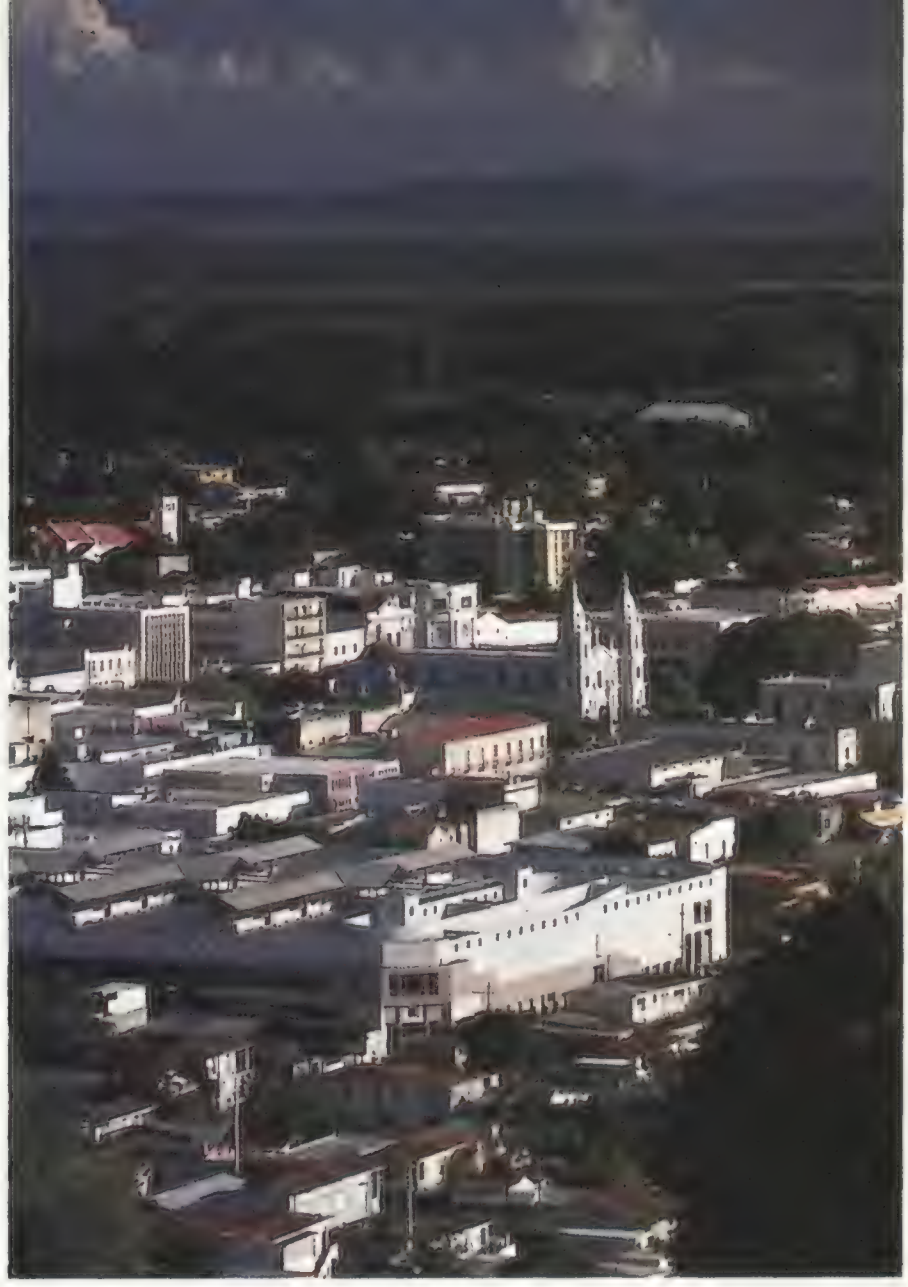
At Museo de la Masacre, sunlight is mediated by shutters and colored glass.

be preserved, but they could paint whatever murals they wanted. The final effect is an interesting mix of exuberant surface decoration over a solid structure, its architectural integrity intact.

A savvy, meticulous, driven group, the Ponce en Marcha staff has come to appreciate Ponce's intriguing history and how that history is reflected in the architecture. From the 16th through 19th centuries, Puerto Rico was in the grip of Spain, whose military virtually held San Juan captive. But while oppression hung like a leaden sky over the fortress of a city to the north, Ponce and other outlying regions enjoyed relative freedom. Along the southern coast, which faces South America and a sprinkling of sister islands, people would scramble to meet Dutch and Danish ships that dealt in contraband.

Then, in the early 19th century, Ponce struck it rich through sugarcane, becoming a refuge for South American plantation owners fleeing political unrest. They had financial contacts throughout Europe and quickly reestablished operations along Puerto Rico's southern coast, growing sugarcane as well as coffee, tobacco and other commodities. The flip side of this idyllic picture was slavery; while Ponce's plantation owners lived in limestone mansions, canecutters inhabited highly flammable wooden barracks, where they slept on stacked shelves or in hammocks–women on one side of the room, men on the other. Slavery was abolished in 1873.

Blessed with the deepest port on the island, Ponce thrived throughout the 19th century as the moneyed foreigners–Catalonians, Majorcans, Corsicans, the Irish, Germans, French and British–flocked there. During those boom years, translators-for-hire found plenty of business on the street corners around the plaza.



At the heart of this once-thriving seaport is the central plaza, anchored by a twin-towered cathedral.

Ponce Creole: a wondrously rich mélange

With the flood of wealthy foreigners came refinement in a decidedly eclectic vein. Architects, many of them engineers by training who had studied in France and Spain, innovated freely with many styles–neoclassical with splashes of Moorish, Spanish Colonial, Spanish Revival, Caribbean Provincial and, much later, Art Deco. What unfolded was a wondrously rich architectural mélange, now loosely referred to as Ponce Creole.

In an area that suffered from extreme heat and humidity and sporadic floods, practical solutions were devised, such as raised marble foundations, interior patios, and rear balconies with fixed wooden louvers that at once provided shade and ventilation. Stained-glass windows were used as sun shields; intricately crafted, lacelike wooden panels and transoms allowed the flow of air from room to room. Elaborate pressed-tin ceilings and handmade concrete tiles in mosaic patterns also cooled things off. Opulent, cornice-crowned, garland-strung public buildings reinforced the city's cosmopolitan flavor, as did the sidewalks bordered with pink marble.

Alfredo Wiechers, celebrated as the city's finest architect, was born in Ponce in 1881. His mother was a Ponceña of Corsican descent, his father a German businessman who twice served as Prussian consul. After studying architecture in Paris, he returned to design many fanciful residences, most remarkably his own, the peach-tinted Casa Villaronga. Immediately identifiable by its airy circular pergola, which affords a sweeping rooftop view of the city, the house epitomizes his style, neoclassical softened with graceful, undulating lines.

The fine buildings of Ponce provided a fitting backdrop for a city devoted to the arts. The La Perla Theater, designed by Italian-born Juan Bértoli Carderoni in 1864, hosted performances by Anna Pavlova and major European opera companies. Shops selling books and musical instruments proliferated, each filled with the sounds of pianists and flutists polishing their Bach, Mozart and *danza*, the popular, waltzable music written by celebrated Ponceño Juan Morel Campos. At night, in the glow of oil-burning lights, people attired in finery strolled through Plaza de las Delicias to the accompaniment of open-air concerts.

In 1883, the plaza was center stage for an extravagant

municipal fair, and an exotic, Arabian-style wooden pavilion was built to house colorful exhibits. Today, the whimsical black-and-red-striped building (below), which served for years as the fire station, is the city's most famous landmark.

Because of its relative independence, Ponce was a bastion of freethinking; between 1852 and 1910 it boasted some 200 newspapers, many of them stormily espousing independence. Spain granted a degree of autonomy in 1897. But only a few months later, when the Spanish-American War broke out, the United States took over the island. By the close of that year, as the war ended, Puerto Rico was ceded to the United States, and in 1952 the island won commonwealth status, thereby becoming nearly self-governing. Today, fiery political debate revolves around the question of statehood, status quo or independence.

Despite the turbulent events at the turn of the century, Ponce clung to its prosperity and high style for another two decades. But things gradually went downhill. From the mid-'50s to the mid-'70s, the city experienced a minor comeback as oil refineries sprouted on the outskirts of town. When they closed, Ponce tumbled into a long, ugly decline. Mabel Baiges, who grew up there, recalls the 1970s with a sadness that fuels her fierce commitment to restoring the city. "I remember when the refineries closed, and stores were boarded up. I lived through that; I was young. In 1970 things were still OK, but by the end of the decade it had all changed."

Ponce, which now sprawls far beyond the historic district, still has problems. But there have been positive signs of growth, due in part to Ponce en Marcha. Since 1988, tourism has increased by 525 percent, and 21 new industries and manufacturing plants have settled there, bringing almost 2,000 jobs.

The hope for the historic district is that, while attracting tourists, it will also once again become a functioning neighborhood. Most of the old buildings have been adapted to contemporary use. Dripping with heavily classical exterior ornamentation, Casa Armstrong-Poventud (the work of Puerto Rican-born Manuel Víctor Domenech, onetime mayor of Ponce) is currently the Office of the Institute of Puerto Rican Culture. The astonishingly eclectic Casa Salazar (a blend of neoclassical, Moorish and Art Nouveau elements designed by Puerto Rican-born Blas Silva Boucher) is now the Museum of the History of Ponce. Casa Villaronga may also be used as a museum. A few of the houses remain in the families of yesterday's aristocracy. This tight-knit old guard heartily supports the city's restoration.

The most visible achievement of Ponce's restoration is the area around Plaza de las Delicias, which was established in 1692. The newly restored buildings that face it are a living textbook of the city's diverse history, from the Spanish Colonial-style city hall (1847), to Casa Armstrong-Poventud (1901), to the Art Deco Fox Delicias Theater (1931). The Fox Delicias has been transformed into a shopping mall; its restoration, along with that of the other buildings on the block, was paid for by the government of Spain in support of Ponce en Marcha.

Baiges, who pursues her job with the intensity of a missionary, finds the transformation mind-boggling. The plaza of her childhood, she says, was the grim haunt of derelicts. "The municipal band played by the fire station on Sunday nights," she recalls. "I'd go with my family, but we'd stay in the car. You didn't want to be seen there; it wasn't safe."

Whimsical firehouse, dating from 1883, is a fitting landmark for traditionally freethinking Ponce.

Now, on a typical Saturday, this vaguely surreal square, anchored by the cathedral, the firehouse, a magnificent computer-controlled fountain and impeccably pruned India-laurel fig trees that resemble gigantic toadstools, hums with activity. Brides in clouds of chalk-white lace emerge with their grooms from the cathedral. Lovers nuzzle on park benches, puppet shows spring up, aspiring opera singers burst into song. Trolleys and horse-drawn carriages circle the periphery.

When night descends, turn-of-the-century-style street lamps imported from London bathe the whole spectacle in an ethereal light. A steady stream of traffic glides around the handful of cars that are double-parked in front of the ice cream store. Families clutching cones emerge from the store, cut between the moving cars and stroll past the firehouse into the plaza. There, lulled by the raucous splashing of the fountain, they invariably slow down. Tumbling and spraying from dozens of jets, the water changes configuration and color every minute or so. Children, jumping with delight each time this happens, pull their parents over to watch.

Standing in the center of the plaza, it can seem that Ponce's transformation is complete, but the magic wears thin when one walks ten blocks in any direction. Many buildings remain untouched, weed-choked and ominous with their boarded-up windows. The government money is just about gone, says Magda Bardina, and the people of Ponce will have to pick up the ball.

But Bardina and the other young architects have no doubt that this will happen–and they welcome it. "I think that, with Ponce en Marcha, we took a road, and now people don't want to go back," she says. "Now the people want to do it themselves. It will be best when we don't have anything to do–when we disappear."

By David Roberts

Men didn't have to prove they could fly, but women did

To combat the perception that women fliers were freaks, in 1929 a group called the 99s was formed. And it's still going strong today

Arm in arm, joyous 99s celebrated Amelia Earhart's solo Pacific crossing in 1935. The jaunty Louise Thaden (opposite) won the first coast-to-coast Women's Air Derby (known as the "Powder Puff Derby") in 1929.

Two thousand feet above the Arizona desert, the Travel Air's engine sputtered and died, sending the small plane earthward. Pilot Marvel Crosson fought to restart the engine, then bailed out. By the time she had cleared the craft, she was too low for her parachute to open. Though several witnesses saw and heard the crash, it took searchers on horseback more than 12 hours to find the wreckage in a trackless badlands of thorny mesquite. Two hundred yards from the plane, tangled in the parachute, lay Crosson's body "with every bone broken," according to a local newspaper.

An experienced pilot, Crosson died on only the second day of the Women's Air Derby, a nine-day hopscotch from Santa Monica, California, to Cleveland, Ohio, devised in August 1929 as the first women's air race in history. The public knew well that flying of any kind was dangerous, and the aviators themselves accepted the risk. Many a male flier had met his end plummeting to earth or sea. Yet Crosson's death touched off a nationwide furor, summarized in the newspaper headline "Women Have Conclusively Proven They Cannot Fly." Calls rang out demanding that the race be canceled. The derby's fate was further clouded by inklings of possible sabotage. A German contestant, Thea Rasche, made a forced landing when her engine, like Crosson's, suddenly quit. Unscathed, Rasche discovered sand in her gas tank, then revealed to reporters that on the eve of the race she had received a telegram warning her against sabotage. Another competitor was forced out of the race because of broken brace wires that her husband–an expert pilot himself–claimed bore signs of having been corroded with acid.

Amelia Earhart still had a girlish look in photograph for her 1923 aviator's license.

Blanche Stuart Scott, a brilliant pilot, was denied a job in 1916 because of her sex.

Record-setter and cause-promoter Ruth Nichols waves during 1932 goodwill tour.

Few if any pilots could rival Florence (Pancho) Barnes when it came to flamboyance.

The fliers themselves refused to give up–and thereby changed the course of aviation history. On August 26, Louise Thaden, who at only 23 already held women's records for endurance, altitude and speed, landed first in Cleveland, winning the race. Of the 20 pilots who started from Santa Monica, 14 made it to the finish line.

Despite the shock of Crosson's death, the race instilled a powerful comradeship among the contestants. Two months later, 26 women fliers met in a hangar at the Valley Stream, Long Island, airport, to found a nationwide organization for female pilots. Talking over the din of engines, serving tea from a tool trolley, they decided to extend invitations to all 126 licensed female pilots in the United States. At the suggestion of Amelia Earhart–third in the derby but already America's most famous aviatrix–the group would take its name from the number of charter members who pledged a dollar apiece as subscription fee. As it turned out, 99 pilots signed up. Earhart was elected first president.

Sixty-five years later, the 99s (a.k.a. the Ninety-Nines) is a flourishing force, with some 6,400 members ranging not only across the United States but as far afield as Russia and Saudi Arabia. Dues have climbed to $45 a year, but the jaunty and informal style of the organization persists. From its headquarters in Oklahoma City the 99s conducts a crowded roster of races, get-togethers and public service activities. In an important sense, the central mission of the 99s remains the one that led to its founding: to combat the entrenched prejudices that, despite the myriad achievements of females during aviation's first century, still confront each one who climbs into a cockpit and taxis toward takeoff.

The charter members of the 99s constituted a diverse gathering of remarkable women. Ruth Elder, who

Between excursions, frequent contributor David Roberts lives in Cambridge, Massachusetts. He last wrote about the archaeologist Richard Wetherill.

Record-holder Jackie Cochran was boss of the Women Airforce Service Pilots.

After Elinor Smith flew under four Manhattan bridges, the mayor grounded her for ten days.

In 1927 Ruth Elder failed to match Lindbergh's Atlantic flight; she would head for Hollywood.

would soon become a Hollywood actress, had attempted to fly the Atlantic (with a male copilot) in 1927, the same year as Charles Lindbergh's solo crossing; she survived a crash landing at sea near the Azores. Elinor Smith was a daredevil who at age 17 had flown *under* New York City's four East River bridges, earning a ten-day grounding from Mayor Jimmy Walker with her promise never to attempt the stunt again.

Florence (Pancho) Barnes was a hard-talking free spirit who, disguised as a male seaman on a banana boat, had run guns for Mexican revolutionaries. She later established the Happy Bottom Riding Club, which may or may not have been a brothel, in close proximity to an Army airfield in the California desert. Barnes did stunt flying for Howard Hughes' film *Hell's Angels*, starring Jean Harlow. Her 99s cohort Vera Dawn Walker worked as a stand-in on a Tom Mix movie.

Ruth Nichols later dueled with Earhart to be the first woman to solo the Atlantic. She crashed in Newfoundland in 1931 on her first attempt, breaking several vertebrae. Only three months later, wearing a cumbersome steel support corset that encased her from armpits to hips, she broke the women's world record for distance on a nonstop flight.

The media and the public embraced those deeds with fervor, yet in such a way as to put a patronizing twist on the fanfare. Thus Will Rogers, at the starting line of the 1929 race, dubbed it the "Powder Puff Derby"–a name that has stuck, and that members of the 99s, with characteristic irony, freely use. The press hailed the pioneering women pilots as the Flying Flappers, the Sweethearts of the Air, the Petticoat Pilots. And though the women came from poverty as well as wealth, they were perceived as leisured dilettantes. Wellesley graduate Ruth Nichols, as intense an aviator as Lindbergh, had to bear the sobriquet the "Darling Deb Flyer."

From the earliest days of aviation, women had played a conspicuous role, but all too often it was as a novelty,

even a freak, in a sideshow. There was, for example, a 19th-century fad of women parachuting from balloons before paying crowds. The first woman ever to fly solo, Blanche Stuart Scott, made a good living after 1910 as the "Tomboy of the Air," stunt flying upside down or in reckless dives before gasping crowds. But when she aspired to become a commercial pilot for Glenn Curtiss, who had founded one of the first aircraft manufacturing companies in the United States, Curtiss put a throttle-block on her engine to keep her from taking off.

Scott's experience would be repeated by later women who threatened to invade the male bastions of "serious" aviation. It was to overcome the perception that women fliers were freaks that the 99s was founded. The organization's first decade, the 1930s, saw both huge strides and galling setbacks. Even today, women's struggle to be taken seriously as fliers continues.

Recently I attended a luncheon meeting in Boston of the Eastern New England chapter of the 99s. I had been conducting an informal survey to try to gauge the depth of the prejudice that lingers against female pilots. My gambit was to ask women friends if they had ever settled into their seats on a commercial flight only to have the voice of the pilot over the intercom turn out to be that of a female. If so, how had they reacted?

About half my informants answered with assertions of full approval, but the other half–including women who consider themselves feminists–admitted to qualms ranging from anxiety to full-bore freak-out. As one put it, "I wanted to get off the plane. I knew I was being a jerk, but I really had to talk myself out of fleeing."

At lunch with some of the 99s, I shared my survey results. The women had heard it before, too many times, and they were armed with rejoinders. Anne Baddour, a record-setting pilot for MIT's Lincoln Flight Test Facility, said, "An airplane doesn't know whether it's being flown by a man or a woman." She argued that women may actually be safer fliers than men. As Baddour likes to say, "A woman never buzzes her boyfriend's house."

One of the services the 99s performs is to give scholarships to budding but impecunious young female pilots. The New England gathering honored Danuta Pronczuk, a 23-year-old woman born in Warsaw and living in Boston, whose goal in life is to become a pilot for a major airline. As I chatted with Pronczuk (p. 81), I was struck by her fierce determination.

I myself had never flown in a plane with a woman pilot, so when Pronczuk suggested I go along on one of her upcoming lessons, I accepted. A few days later, at Marshfield Airport south of Boston, I found myself in the backseat of a twin-engine Piper Seneca with Pronczuk at the controls. At 5 feet 2 and 100 pounds, she is small enough to need an extra pillow behind her back so she can see over the instrument panel. She had amassed 355 hours of experience flying single-engine planes, but barely 2 hours in twins.

Doing their part to win the war, a group of WASPs leaves the operations hangar heading for their planes in the fall of 1943.

Jerrie Cobb (above), perhaps the best woman pilot in the country in late 1950s, was denied a chance to become first female astronaut. Bonnie Tiburzi (right) was first to fly for major carrier, American Airlines.

During the next 90 minutes, Pronczuk practiced aborted takeoffs, flying with one engine out and–most dramatically–coming in to land at Provincetown in a stiff crosswind with one engine idling, wearing a "hood" (a device that simulates instrument conditions) down to 500 feet. More than once I wiped my palms on my trousers, as I tried to convince myself that it was the aerial gimmickry, not the gender of the pilot, that was addling me. Yet in the midst of my discomfort I recognized Pronczuk's calm and skill. Later her (male) instructor, who had ridden copilot but never seized the wheel, told me privately, "Danuta was incredible. I would have given her her [twin] license on the spot–and that was just her third hour."

Over lunch, Pronczuk explained the appeal of piloting. "It's the most important thing in my life," she said. "It gives me this great joy. I have an album of pictures from my flights–I take it out when I'm depressed."

A few weeks later I visited the 99s headquarters in Oklahoma City, housed in a handsome building on Amelia Earhart Drive beside the international airport. As I combed through archives and perused memorabilia, the joie de vivre of three generations of women pilots buoyed my thoughts. The sign on the door of the women's bathroom reads "Pilots"; on the men's, "Co-Pilots." Supportive males are often referred to as "49½ers."

The headquarters doubles as a small museum. One case serves as a shrine to Earhart, containing, among other relics, the scarf she wore on nearly all her flights but left behind on the fatal last leg of her 1937 round-the-world attempt; her first license, from 1923, bearing perhaps the best photograph of Earhart ever taken (p. 74); even a lock of her hair, fine-spun brown streaking to blonde.

Other cases hold the telegram Louise Thaden sent her mother on winning the 1929 Derby: "LANDED OK CLEVELAND FIRST LOVE LOUISE"; rheostats, flying suits, aviator helmets and goggles, and other souvenirs from a dozen pioneers; and scores of classic photographs, including a group portrait from the founding meeting in the Valley Stream hangar.

At the headquarters I read the dolorous chronicle of women's efforts to become commercial airline pilots. In 1934 a flier named Helen Richey was hired by Central Airlines, essentially as a publicity stunt. When Richey took the appointment seriously, the male pilots' union blackballed her and Central forced her to resign.

It would take another 39 years before Frontier, with Emily Warner, and American, with Bonnie Tiburzi, hired the first bona fide commercial women pilots. Tiburzi's lively autobiography, *Takeoff!*, is full of bizarre ordeals of passage that it is hard to believe were perpetrated on women pilots as recently as 1973. One veteran airline captain, forced to share the controls with a woman whose hiring came shortly after Tiburzi's, told her, "Don't touch a thing in this cockpit!"–then refused to talk to her the rest of the flight. In flight school Tiburzi was required to stand in the hallway outside class each day while the instructor launched the session with the obligatory off-color joke; not only that, but she was asked to plug her ears with her fingertips.

In lieu of putting women in the cockpit during the 1930s, the airlines discovered the ideal role for the "weaker sex" in aviation: as flight attendants (formerly "stewardesses," and originally, in 1930, "hostesses") (SMITHSONIAN, February 1994). The idea was the brainchild of the manager of Boeing Air Transport's San Francisco office, Steve Stimpson, who proposed "having young women stewardesses" serve food on flights and look out for passengers. Before 1930, the copilot on a commercial flight handed out cold box lunches; now a

pretty, smiling woman in uniform served a hot "free" meal. One airline put hostesses to work giving en route fashion shows for women passengers. The qualifications for hostesses included, in the words of Braniff's regulations, "perfect physical condition, well proportioned, no disfigurations. Unquestionable family background" and, of course, "pleasant personality."

This was not, needless to say, what Earhart and the other pioneers had in mind when they founded the 99s. Spurred by their new solidarity, women pilots pushed the limits of the often unreliable planes they flew. During the early 1930s, the women's records for altitude, speed and endurance were regularly traded among an elite cadre of the most ambitious: Amelia Earhart, Louise Thaden, Ruth Nichols, Pancho Barnes, Laura Ingalls and the English flier Amy Johnson.

Every year the Powder Puff Derby was flown; in addition, women began to compete in what had previously been races for men only. The breakthrough came in 1936 when Louise Thaden won the Bendix Trophy, beating a field of top male pilots on a course from New York to Los Angeles.

Such flying took its inevitable toll. Between 1930 and 1942, ten of the 99s'charter members were killed in crashes. The toll was equally high among men, but as with Marvel Crosson's death in 1929, the new tragedies stirred criticism from some of the most authoritative pilots of the day. Touring the Soviet Union in 1938, Charles Lindbergh was dismayed to find women flying in the USSR air force. "I do not see how it can work very well," he grumbled to his diary. "After all, there is a God-made difference between men and women that even the Soviet Union can't eradicate." (His wife, Anne Morrow Lindbergh, was the only top American aviatrix of her era not to join the 99s.) World War I hero Eddie Rickenbacker strenuously opposed the employment of women even as air hostesses.

The finest achievement of the 99s' pilots in their first decade was probably Earhart's solo crossing of the Atlantic in 1932. Four years earlier, she had become the first woman to make the crossing, in a Fokker trimotor flown by two men. The flight was dangerous enough: in 1927 there were 19 fliers, including 2 women, who died attempting it. But the avalanche of publicity triggered by Earhart's presence on the plane buried the men who had actually sat at the controls. The attention was choreographed by publisher George Putnam, who was smitten with the shy, tall, slender former nurse.

None of this went to Earhart's head. As a passenger in the Fokker, she had been, she wrote, "as useful as a sack of potatoes." Her determination to make her own mark as a pilot culminated in the brilliant 1932 solo crossing, in a Lockheed Vega. On her last flight in 1937, which would have been the first circumnavigation of the globe near the Equator by any flier, male or female, Earhart was the pilot; her navigator was Fred Noonan.

From the late 1930s through the early '50s, Earhart's baton was taken up by Jacqueline Cochran, arguably the finest woman pilot in American history. Born dirt-poor in a north Florida sawmill camp, Cochran escaped by becoming a teenage beautician. In New York City, she talked her way into a job at Saks Fifth Avenue; shortly thereafter, she met a millionaire who wooed her and ultimately bankrolled her extraordinary career.

A 99's fistful of flying firsts

Cochran became the first woman to fly a bomber across the Atlantic, to fly a jet across the same ocean and to break the sound barrier. She was also the first woman to make a blind landing, which she accomplished in 1937 in Pittsburgh. In 1938 she won the Bendix Race, beating a field of men. Cochran won the Harmon Trophy, for the outstanding woman pilot of the year, 16 times. She became a good friend of President Dwight Eisenhower's and is credited with coining his campaign slogan "I like Ike."

Cochran remains best known, however, for founding and directing the effort that became the Women Airforce Service Pilots (WASP) program during World War II. Distinguished though the achievements of the WASPs were, they amounted to less than Cochran and her colleagues envisioned. In the Soviet Union and Germany, a small number of women actually flew bombers during the war. This was never allowed to happen in the U.S. Army Air Forces. That American women fliers played any part at all in the war effort–chiefly delivering planes within the United States–owed much to the enlightened advocacy of Gen. Henry (Hap) Arnold.

The most poignant chapter in the 99s' history opened in 1959. NASA was gearing up to train the first American astronauts–a campaign that would culminate in Alan Shepard's 1961 flight and in John Glenn's orbital voyage the fol-

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FOR THE MOMENTS THAT MATTER MOST.

Nancy Tier, holding medallion for women fliers, recently gave her Cessna 170 to her grandson, a Navy jet pilot.

lowing year. In Dr. W. Randolph Lovelace, the space agency had a top-ranking administrator every bit as enlightened as Hap Arnold two decades before. Lovelace approached the 99s, asking for a short list of top women pilots to undergo testing as Mercury astronaut candidates.

Twenty-five women eventually underwent the rigorous testing. To the surprise of many people, 13 of them qualified, performing as well as the male candidates. The 13, moreover, averaged almost twice as many hours of flight experience as the men. But just as their candidacy began to seem real, the forces of counterreaction set in. In a flurry of bureaucratic memos, "the study," as NASA now called it, was declared "terminated." The initial pretext was that the astronauts' pressure suits would have to be redesigned to fit the female anatomy. When this objection proved specious, NASA came up with a perfect Catch-22. Astronaut candidates, the agency ruled, must have experience as jet test pilots. Since the military already prohibited women from test-flying jets, no woman could qualify.

The campaign to put women in space might have died a quiet death but for the fact that one of the candidates, Jane Hart, was the wife of Senator Philip Hart of Michigan. Hart prodded Congress, and eventually the House Committee on Science and Astronautics held a hearing.

The reluctant star of the show was Jerrie Cobb, a reclusive, deeply religious woman from Oklahoma who had tested as the outstanding candidate among the women. At the time of her selection she was 28, had already been flying for 17 years, held several records and was probably the best woman pilot in the country. Now, though she hated public speaking, Cobb made an eloquent plea to the committee to give women the chance to go into space. The dream had become her personal life's mission.

Arrayed against Cobb were a series of experts who, in polite and indirect statements, voiced doubts and qualms. Sadly and almost inexplicably, one of the most damaging testimonies against the women came from Jackie Cochran. Cochran had launched the effort to find the candidates, had even paid the way to the Albuquerque testing lab out of her own pocket for the women who couldn't afford it. But now she remembered her experience with the WASPs. Nearly 40 percent of the trainees during the war, she told the committee, had dropped out to get married or have children. She warned NASA not to "waste a great deal of money" by taking "a large group of women in, because you lose them through marriage."

In the end, the House committee never came to a concrete recommendation, and NASA put women-as-astronauts on a cold back burner. Jerrie Cobb did not give up easily: for years she kept up her crusade, lobbying Congressmen and NASA officials. But it would not be until 1983 that Sally Ride became the widely celebrated first American woman in space.

Cobb, having been denied her dream of being the first female astronaut, eventually turned her life toward flying as a missionary bush pilot in the Amazon, bringing food and medicine to remote tribes, work that she continues to this day. In 1980 she was nominated for the Nobel Peace Prize.

As I talked to current 99s about why they had gotten hooked on flying in the first place, one word cropped up again and again: "freedom." In some visceral way, the act of piloting a plane through the empyrean embodied for these women a liberty that had analogues in all kinds of other realms.

She said "I do"–but did she?

For Amelia Earhart, freedom was paramount. After turning down George Putnam's proposal of marriage six or seven times, she finally succumbed in 1931 but not before writing one of the most amazing letters of acceptance ever penned: "You must know again my reluctance to marry, my feeling that I shatter thereby chances in work which means so much to me. . . . Please let us not interfere with the other's work or play, nor let the world see our private joys or disagreements. In this connection I may have to keep some place where I can go to be myself now and then, for I cannot guarantee to endure at all times the confinement of even an attractive cage. . . . I must exact a cruel promise, and that is you will let me go in a year if we find no happiness together. . . ."

Jerrie Cobb never married, turning down the man who was the love of her life. "I set him free," she wrote in

an as-told-to autobiography, "though it broke my heart to do so, and though he refused to go."

On a balmy day last March, the 99s' Michelee Cabot and Harriet Fuller flew me in a Cessna 182 to Burlington, Vermont, where we paid a visit to Nancy Hopkins Tier, one of the few living charter members. At 85, despite a recent stroke, Tier proved a lively and opinionated conversationalist. "I knew Louise Thaden very well," she reminisced. "I think she was the best woman pilot of the day by far. I knew Amelia well, too. She was always on the go. She didn't sit around and talk. You did all the talking." A frown crossed Tier's brow. "Everybody always says that her disappearance is such a mystery. I don't see why; it's not a mystery to me. I think we know exactly what happened to Amelia. She was picked up by the Japanese, taken to Saipan and put in jail. Seven years after she disappeared, she was shot."

Tier relived for me her only close call in flying, which occurred one day in 1933 when she was taking her transport license test in a biplane over a New York field. "I did two and a half turns to the left, and she kept right on going around. Went into a flat spin, nose up, and kept going around, about 15 times. I decided I was going to get out. I had my leg over the side, and I was thinking, 'How am I going to get clear of the lower wing?' Just putting my leg out pushed the nose down a little. I reached down and opened the throttle and came out of the spin about 200 feet above the ground."

Tier laughed merrily. "I wasn't nervous at all. Then, hours later, as I was getting on the train to go to Mineola, my knees began to knock."

I asked Nancy Tier about the joy of flight. "You know," she mused, "unless I've seen a country from the air, I don't feel I really know it. Here in Vermont you see how the small towns relate to the lakes and mountains." She had flown for 66 straight years–from 1927 through 1993, when she suffered a stroke. During my visit, she was still experiencing trouble with a vision problem in her right eye. "I think I could fly now," she said, "if my eye hadn't gone wacky. Do I miss flying?" she asked, repeating my question. "Of course I miss it. When you're 85, I suppose you have to miss something."

Danuta Pronczuk, 23, learned how to fly with the help of a 99s scholarship. She works for Flightways of Long Island as a pilot. Flying is the biggest thing in her life, she says: "It gives me this great joy."

By Steve Kemper

He 'wrestles' wild plants until they release his dreams

Ronald Parker scours the backcountry in search of plants he can breed to produce the flowers that bloom in his imagination

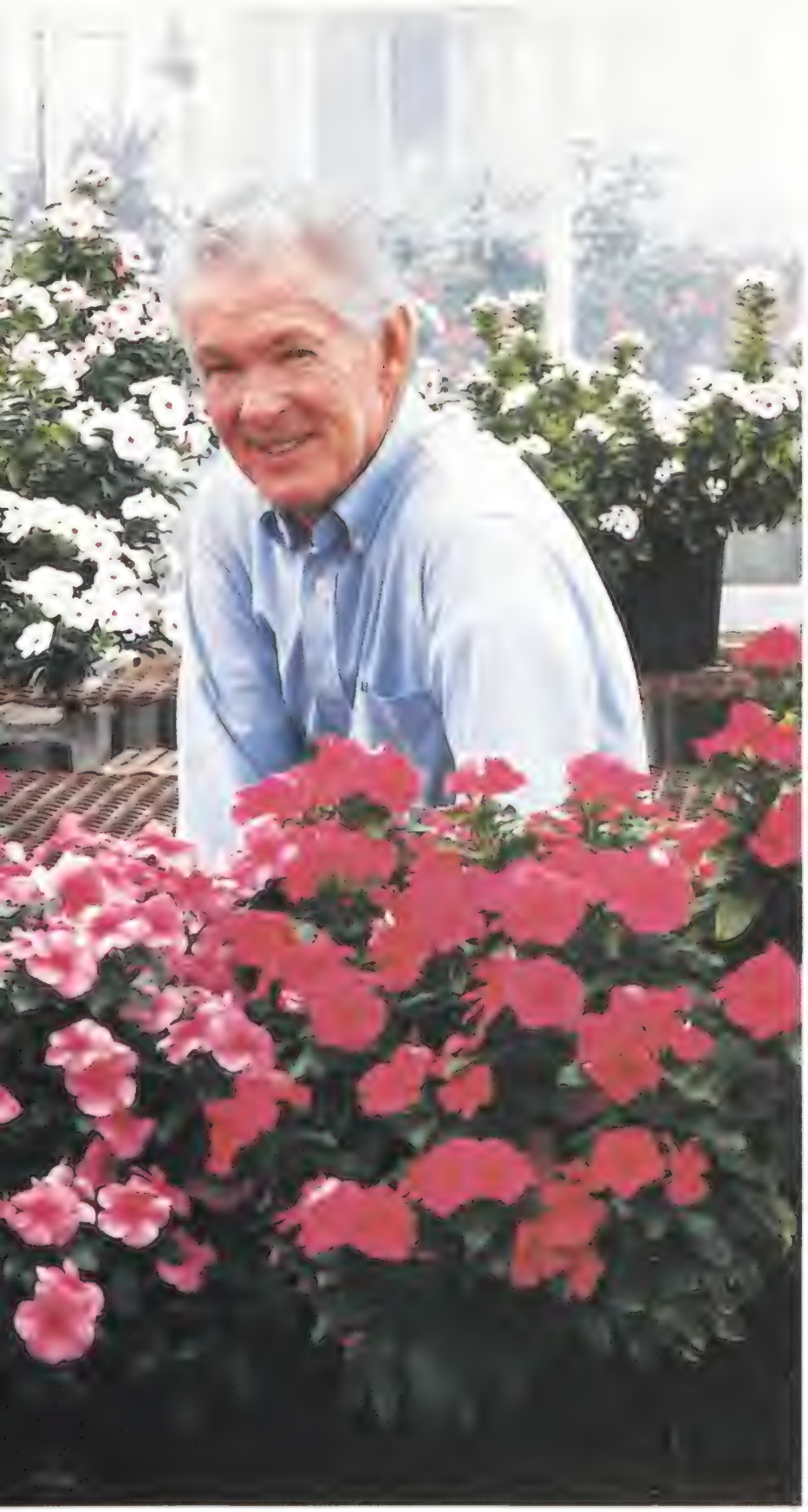
In greenhouse at University of Connecticut, Parker displays some of the showy *Catharanthus* he developed.

"Today, plant exploration," said Ronald Parker, throwing a canteen and a fannypack into the backseat. It was an early May morning in St. George, in the dry southwest corner of Utah. "We don't know what we'll find, or if we'll find anything, or where we'll find it, or if it will be flowering or seeding. So we must be prepared to be disillusioned and disappointed. Or we might be on top of the world because we've found a new possibility."

Over the next few days, we would hike through deserts and dry washes, up and down mesas and canyons, across sagebrush flats and red sand dunes, in search of Parker's quarry: wild plants that he hopes to domesticate into dazzling, well-behaved new flowers for the home gardener. "You may see me looking at something this week and think, '*Not* very impressive,'" he continued. "But I see potential. I can make the changes I need for flower size, flower color, height, branching, plant habit and heat tolerance by crossing with other species. In my mind there are no barriers. I'm just doing what nature would do if the species weren't separated by an ocean or a mountain range. Who's to say it wouldn't happen anyway, in another million years? I'm just playing with the time span."

Parker, 58, is a plant breeder. His counterparts in academia and seed companies work mostly with species already under cultivation, trying to squeeze some new attribute out of the already familiar. For example, though more than 800 species of impatiens grow in the wild, virtually every garden variety traces its ancestry to just one species, *Impatiens walleriana*. Parker, on the other hand, plots revolution. He wrestles with wild plants until they release his dreams for them. As far as he knows–and people in the flower-seed industry confirm this–he is the only person in the country attempting to interbreed different species of wildflowers, a process known in horticulture as interspecific hybridization.

Garden flowers are big business. Americans spend somewhere between $3 billion and $4 billion every year on bedding plants. Because so much money is at stake,



Most plant breeders work with species already under cultivation, but Parker experiments only on wild stock.

seed companies compete fiercely to produce the next "hot" petunia or impatiens. Parker has learned from hard experience that when seed companies hear rumors about exceptional new cultivars, they will spy and steal to discover their rivals' secrets. That's why he surrounds his experimental fields at the University of Connecticut (UConn) in Storrs with electric fences. "I watch after my most valuable materials as if they were worth hundreds of thousands of dollars, because they are."

Parker's work is familiar to gardeners from his radical redesigns of the genus *Catharanthus* (popularly but incorrectly called vinca, which belongs to another genus). Before Parker, *Catharanthus* was an insignificant flower available in two or three dull colors. Parker saw potential and worked on the genus for 12 years. In 1991 his new versions hit the market like gaudy bombshells. They were shapelier and had bigger flowers that bloomed in unprecedented pink and deep rose.

That year, all three of his new cultivars won All-America Selections (AAS) awards, the Oscars of horticulture. It was only the second time since the awards began in 1933 that someone had won a triple–doubly remarkable considering that Parker had done it working by himself, without the resources of the large seed companies, while teaching plant sciences at UConn. He won another AAS award in 1992 for a bright white cultivar, and last year *Greenhouse Grower* magazine named *Catharanthus* the best new crop of the past decade and anointed Parker one of floriculture's "Guiding Stars."

A fertile field for making money

Parker's inventions, which UConn owns, are hot properties. So far, his new cultivars of *Catharanthus* have produced $233,500 in royalties–$159,500 last year alone. One-third of that redounds to Parker as the inventor. According to the most recent survey of growers, *Catharanthus* accounts for only 4 percent of the wholesale market, but that segment adds up to more than $40 million in sales annually. "I entered this field in the most naive state you can imagine," Parker says. "Through all the sweating and slaving, it never entered my mind that any money would return to me. I know people will think that's crazy, but it's true."

Parker's work is unique because it combines taxonomy, botany, genetics, plant breeding and floriculture. Young horticulture PhDs who go to work as plant breeders in seed companies rarely know much taxonomy. "They don't know what wild material exists or how to get it or learn about it," he says. "Commercial breeders are not imaginative. I think that a plant breeder has got to be a dreamer."

Though primarily a scientist, Parker is also part detective and part mule. He is a detective when he tracks down rare seeds held by collectors, or slogs through thick taxonomy tomes looking for promising species, or hunts down plants in the wild. He is a mule every summer. It takes a strong back to hand-transplant and hand-hoe 30,000 seedlings, most of which finally get discarded in his accelerated version of evolution. It's also rather mulish to spend a dozen years fussing over one genus of flower, ironing out wrinkles pressed into it over millennia, so that people will have something fresh and pretty to put in their gardens.

Photographs by Robert Benson

The man who tames wildflowers

Gardeners are lazier than they used to be. They want plants that can go into the ground before Memorial Day and flower all summer long without much attention. Parker keeps an eye out for things that can do well even if they are all but abandoned. He went to Utah to investigate plants that thrive in harsh desert washes and the thin soil of mountainsides. He wanted to breed that toughness into the flowers growing in his imagination.

First he had to find the real plants. As we walked across the campus of Brigham Young University (BYU) in Provo, where Parker earned his doctorate in botany, he carried a briefcase full of files on 65 genera. The files represented months spent poring over taxonomy books, the tedious first step in designing new cultivars. He told me that the long way to find the wild plants he sought was to visit a herbarium and look at specimen trays to see where the plants had been collected. The shortcut was to find an expert who knew precisely where the plants were growing right now.

Prof. Stanley L. Welsh, director of BYU's Monte L. Bean Museum, was the perfect shortcut. A former teacher of Parker's, he not only coauthored the taxonomic bible on Utah's flora but also has a photographer's eye and a mapmaker's sense of topography. The two men sat at a table in the herbarium, and Parker fired off Latin names, asking for locations. Welsh was never stumped.

At the end, Welsh suggested a flower not on Parker's list. "Take the gravel road toward Beaver Dam Wash," he said, "until you come to some limestone knolls. Look for a lone cottonwood. They call that Bitter Spring. Look at the penstemon growing in the cracks on that limestone. It's the cutest little penstemon ever, *Penstemon petiolatus*. It's a low shrub with big flowers and a long season. And talk about drought-tolerant–there's nothing drier than a limestone boulder." Parker looked like a pointer on a scent. "That may be *the* find of the trip," he said.

On the four-hour drive to St. George, where Parker is building a home, he told me about his boyhood on a dairy farm in southern Illinois. His family didn't have running water or electricity until he was a sophomore in high school. When Parker was about 8, his father tore down an old shed and let him fence off the area and plant flowers. A few years later he got permission to put a fence around the house and landscape the yard, as long as he did his chores first.

He graduated from the University of Illinois with a degree in horticulture. His graduate education was stop-and-go. The first interruption was a stint in the Army. Then his father died, and he had to return to the farm for a year. Next, he worked for six months as a floral designer. The last delay was his Mormon mission: two and a half years spent knocking on doors in Germany. By the time he finished his doctorate, he was 33. He taught genetics and botany at Virginia Commonwealth University from 1969 to 1976. When UConn advertised for a plant breeder, he jumped at it.

The next morning we drove through red bluffs and red sand, then turned onto a gravel road that cut through Joshua trees and desert shrubs. A few miles later, we saw some limestone boulders dabbed with bright spots of pink: *Penstemon petiolatus*, the crevice penstemon. "That's it!" exclaimed Parker. We zigzagged up the steep slope. The plants grew right out of the rock. "This is great material," said Parker. "Under ideal conditions, the flowers might be half an inch bigger. Very nice leaf color to display the flower. But I don't know if it would accept the moist conditions in home gardens. Also, it could have an asexual method of reproduction, which would make it harder to hybridize. I wonder if the rocks really are alkaline, and if the plant really needs that?"

Farther down the road, at BYU's Lytle Ranch Preserve, Parker hoped to find *Mirabilis multiflora*, or large four-o'clock. We bushwhacked up and down hills, through cheat grass and cactus, sagebrush and thorn. Parker's white shirt constantly disappeared and reappeared in the brush. No luck. But he did collect seed from desert marigolds. "I think it could be a nice cutting flower," he said, "if I could double the number of flowers and the flower width."

The next day we drove toward Coral Pink Sand Dunes State Park to search for sand verbena and a desert species of *Mimulus*, or monkey-flower. Parker suddenly swerved off the shoulderless state road onto the grassy lip of a ditch. There, growing everywhere, was the large four-o'clock that we had hiked after for hours the day

On the hunt in Utah, the plant breeder examines bush penstemon, evaluating them for flower production.

Hardy crevice penstemon clings to a limestone boulder in Utah. Parker admires its ability to endure drought.

Tufted evening primrose, a plant the scientist likes for its large, delicate flowers, thrives in desert's thin soil.

Wandering across sagebrush flats, Parker pauses to examine yucca flowers growing at the edge of a gully.

before. Parker admired the plant's big flowers, clucked about its 30-inch height (the commercial bedding industry insists on 12 to 14 inches) and regretted its color. "Rose magenta. I'd have to change that. It doesn't go well with brick or with nonwhite siding, and doesn't mix well with reds or blues."

We spent three hours in the park, hiking across sand dunes, scrambling up and down gravelly slopes. A cranky rattlesnake inspired me into a goatlike leap. We were grateful for our canteens. No monkey-flower. I was struck by how much strain was required so that gardeners needn't strain at all.

The following day we went to Zion National Park, then climbed for a couple of hours to Observation Point (6,507 feet) and slogged through the thick manzanita and sagebrush on the mountain. Parker was after a delphinium hybrid. This would be the edge of its range, and Parker prefers to breed parent plants that survive in the harshest possible conditions. Evidently this mountaintop was too harsh: no delphinium.

On our final day we headed over to Kolob Canyon in the northwest part of Zion to look for a mat species of penstemon. On the way, Parker talked about the genus *Penstemon* and why he was looking into certain species. He liked *P. utahensis* for its brilliant red color and flared petals. *P. palmeri* was valuable for its open face, large flowers and fragrance, but its leaves were too big. He liked *P. eatonii* for its red color and because it was a known hybridizer that, in a cross, would produce progeny in a variety of colors, with flared petals. Its drawback was its small, tubular mouth. *P. jonesii* was a hybrid with good colors, from blue to brick red. Although *P. rydbergii*'s blue flowers were tiny, they were whorled–that is, there were lots of them per node. He wanted *P. caespitosus*, the mat species he was hoping to find in Kolob, for its shortness, profusion of flowers and bluish color. *P. petiolatus* could supply drought tolerance and pretty foliage. There were other species as well.

"So you can begin to see how a plan could come together," he said. "I'll put all the species in one big gene pool, stir it up and draw out new combinations, new leaf shapes, new sizes, new colors."

Later in the summer, guided by Parker's detailed instructions of where to find specific plants, colleagues

Steve Kemper writes–and grows dandelions–at his home in Connecticut. His story on shoreline-authority Orrin Pilkey ran in the October 1992 SMITHSONIAN.

Wild hybrids of this and other species provide him with valuable data before he attempts his own crosses.

Imparting a tropical aspect to its otherwise arid setting, golden columbine blooms in Zion National Park.

and acquaintances would collect seeds from all the species he was investigating here and send them to Connecticut. In the spring he would try to cultivate the seeds in the greenhouse.

We parked in Kolob Canyon. The mat penstemon was growing everywhere alongside the road. "What encourages me is how young they flower," said Parker, studying a group of them. "And the bluish color is very good. This guy is loaded with buds. It's going to be one showy little creature." He smiled. "That's a good way to end the day. A good way to keep the dream going."

His first dream was *Catharanthus*. Five of the genus' six species originate in Madagascar, which was closed to plant collectors when Parker began working on the flower in 1978. So he put feelers out to dozens of contacts and 125 botanical gardens around the world, but hit one dry hole after another. One of the species, *C. roseus*, is used in cancer research. Someone told him about a doctor in Paris, retired from a pharmaceutical firm. Madagascar had been a French colony. Perhaps the doctor's firm had collected *Catharanthus* there and the doctor still had access to the plant materials. It was a long shot, but so was the whole venture, so why not?

The doctor replied with 21 seeds of *Catharanthus trichophyllus* from his private collection. In the next decade, *C. trichophyllus* would prove to be the most crucial species in Parker's reengineering of the genus, and a parent of something never seen in nature: a red "vinca."

He found the seeds of another species through a collector in Hawaii–nine seeds, 35 cents each. One of Parker's contacts, an avid gardener, visited Madagascar to scout for flowers and found some seeds. It took two years to collect enough seed to begin breeding–seeds from Spain, Portugal, Brazil, South Africa, India, Florida, Mauritius, Madagascar. The easy part was over.

Species within a genus often won't crossbreed, but five of the six in *Catharanthus* eventually intermarried. First, however, Parker had to subvert their foolproof system of self-pollination. The pollen-laden male anthers practically envelop the female stigma, so the slightest disturbance shakes off some pollen and begins fertilization. He learned to make an incision on the side of the bud and sever the anthers. Then he dabbed the pollen of another species onto the exposed stigma. To guard against stray pollen, he covered the fertilized stigmas with tiny circles of paper made with a paper punch and secured them with Vaseline. All of the buds had to be tagged somehow so he could tell which ones had been

Parker inspects flowers and seedpods of yellow cleome, long-blooming plant he wants to hybridize for gardens.

fertilized with which species' pollen. He painted two of the five sepals, which are about the width of a thick hair, with different colors of bright fingernail polish. "We did these operations thousands and thousands of times," says Parker, adding "It was *very* tedious–and it still is."

Collecting the hybrid seed was equally laborious. Seed picked too soon was immature; seedpods left too long split and emptied their contents onto the ground, an event that Parker regarded with horror. A key new attribute sometimes popped up on only one plant, and who knew what treasures might be lost to carelessness? "We take every progeny *very* seriously," he says. So he had to learn to recognize what the mature pod looked like on the day before it split open. "You have to comb through each plant every day. That includes Saturdays and Sundays because the seeds don't wait."

Next he germinated the seed and transplanted seedlings into greenhouse flats. Finally, in spring, he hand-transplanted them into his trial fields–55,000 of them one summer, though 30,000 was more typical. Then he hoed and weeded and waited to see what developed. He was often short of grad-student helpers, so he drafted his wife and three children as field hands. In early fall he brought the most promising plants into the greenhouse and started the whole process again, crossbreeding for improvements in color, height, shape, flower size, eye pattern, plant habit, heat tolerance, leaf form and so on. That was his routine for a decade.

"In the early years, it was crazy," he told me one day while we were walking through his trial fields in Storrs. "Everything was segregating so wildly, I never had a whole row of anything that looked alike. And the plants were so big and bushy that you could hardly walk between the rows."

On this day, his trial field of *Catharanthus* presented a gorgeous, orderly spectrum of color groups, laid out to facilitate comparisons of tints and growth habits. He was testing 300 different versions of *Catharanthus* for the Waller Flowerseed Company. (UConn holds the patent on Parker's plants but has assigned the right to sell them to Waller.) "Where someone else sees 2 color variations in a row," he said, "I may see 15 or 20. I'm a fanatic about doing something accurately," he added cheerfully. "Nobody but Parker uses string to mark rows when they're planting thousands. But I just can't stand crooked rows. I have perfectly straight rows with plants at 14-inch intervals. And there are no weeds in Parker's fields. I'm known as a fanatic about that."

Because of his meticulousness, seed companies love to test their flowers with him. He doesn't trust anyone but himself to cultivate between rows with a small tractor, for fear someone will run over a plant on the end of a row or swerve and crush some plants, thereby destroying a potential progenitor. "If I lose 3 plants out of 10,000," he said, "I'm distraught." He often dismisses workers who don't hoe to his exacting standards. He does the hand-transplanting with the help of just one grad student, the one he trusts most at the moment, because unless the seedlings are planted at the precisely correct depth, their growth might be stunted or distorted and thus misrepresent their true potential. "I want to know it was genetics that caused the differences between plants, not that they were planted differently or watered differently or fertilized differently."

Parker's graduate students sometimes resent him because he pushes them as hard as he pushes himself. His dedication to his test fields probably stymied his career: instead of pursuing academic glory, he tried another thousand crosses and pursued a deeper red. Consequently, despite his accomplishments as a breeder and a moneymaker for UConn, he never made full professor.

Weeding spies out of the fields

As word about Parker's *Catharanthus* research began to get around in the flower-seed industry, company presidents and research directors started making the trip to Storrs. At first Parker welcomed them, but today he grows his most valuable crops in back fields and plants corn along borders to block the view. An electric fence with a locked gate stretches across the road leading to the fields, and a big sign warns people to keep out. One day I stopped by and walked over to Parker's *Catharanthus* field to chat with his hardworking assistant, Maryke Cleland. Within two minutes, a truck barreled our way from the barn area. It was the farm manager, wearing a stony face. Parker had warned me about this; he has trained his people to repel spies.

Parker himself is the straightest of arrows, a man

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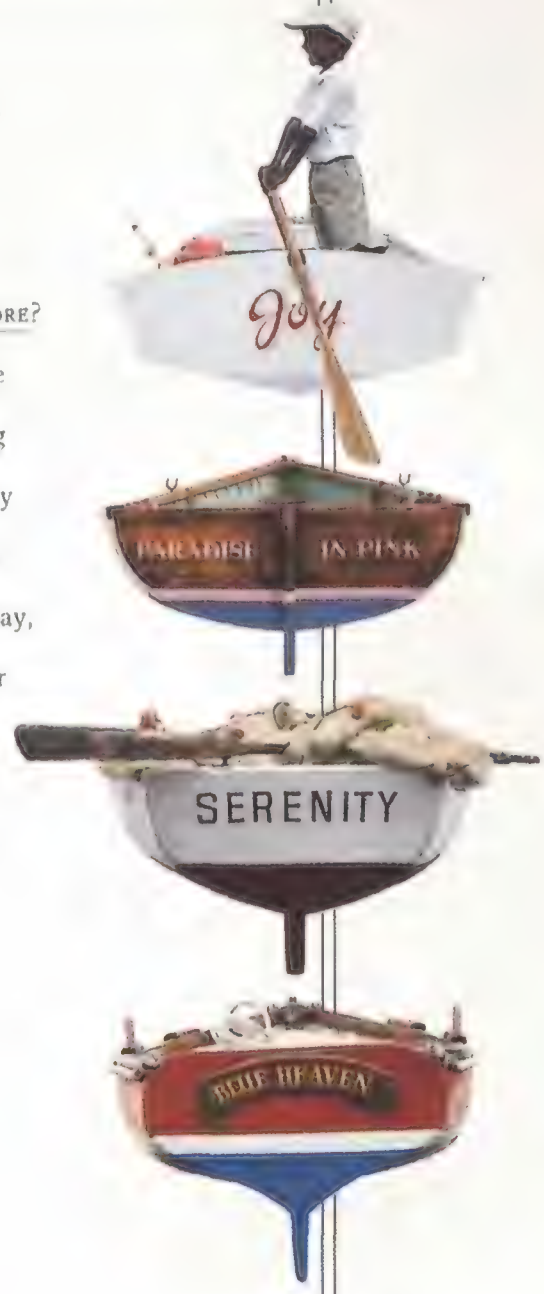

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Some of the *Catharanthus* hybrids in the front row were bred from the species in back, native to Madagascar.

whose idea of a strong expression is "Good gravy!" He is shocked by the unethical conduct he has run into. Once, while he was away, someone from a seed company tried to talk several employees into showing him Parker's fields and greenhouse. Parker himself has sprinted to intercept prying visitors from seed companies who were bearing down on his *Catharanthus* field. "If you picked a single flower and put it into your pocket," he told me, "you could take it to your lab and use its pollen to make a cross. And just a walk through my field would tell a company exactly what stage I'm in for a particular color class. So they could simply go back and say, 'Parker's got yellow, so let's give it up. But he's got no fuchsia pink, so we can beat him on that.'"

When a new cultivar is almost ready, a breeder likes to run trials, or "sample" it, in different parts of the country. All plant materials at a site are supposed to be destroyed when the trial ends. "You spend many sleepless nights when you put those seeds in the mail," Parker said, "because you can't be sure the material won't end up in the hands of competitors."

He has horror stories about *Catharanthus*. One seed company ran trials of Parker's plants in the same field with their own, knowing that about 15 percent of their plants would capture Parker's germ plasm when butterflies and moths carried pollen from his flowers to theirs. He discovered this perfidy only after he did a *Catharanthus* trial in Storrs for that same company and saw his material popping up everywhere. Another seed company simply stole a number of plants from a trial and began its own breeding program. A large greenhouse operator in Texas did the same thing and sold thousands of plants before Parker's anguished and threatening letters finally persuaded him to stop. By then, most of the large seed companies had surely bought the material and moved it into their breeding programs, which Parker estimates saved them six to eight years of work. Several seed companies, aware of the profits generated by Parker's cultivars, are working furiously on *Catharanthus*.

At the moment, he and Maryke Cleland are trying to build something brand-new from wild stock–a commercial yellow impatiens. Cleland began the project in the spring of 1990 as her master's thesis and has continued it with funding secured from a seed company. It has been the usual breeder's nightmare of rejected suitors, unconsummated marriages, abortions and sterility.

It took three and a half years to rescue and culture 4,000 ovules, only 21 of which reached planthood. All of them were different, but the colors ranged from pale yellow to orangish-red–the glimmerings of true yellow. The next step was to backcross the hybrids with the parents, but the hybrids were sterile. "One cannot let the chromosomal facts negate an attempt at a cross," pronounces Parker. So now Cleland has set about trying to induce fertility with a chemical that's derived from the autumn crocus.

Impatiens is the country's best-selling bedding plant, and it doesn't come in yellow. A decade may pass before Cleland and Parker can develop a marketable yellow variety, but Parker says that a single seed of it would be worth $1 million, which helps breed patience.

"Ron Parker was the wake-up call for the seed industry," says Nona Wolfram-Koivula, executive director of the All-America Selections awards. "He showed what can be done with wild species." Everyone I spoke to from the seed companies agreed that they were now awake to the potential of wild germ plasm, but so far no one is actually doing anything about it. Or at least they aren't admitting to it. "It takes a very dedicated individual like Ron Parker," says David Lemon, the new-product manager for Oglevee, Ltd., in Lompoc, California. "It's very tedious and long-term, and most commercial companies want results quicker than that."

Parker is retiring from UConn this year. After that, he will work as a consultant for Waller, primarily because he trusts the company's research director, one of his former grad students. He will continue to pursue his ambitious goals for *Penstemon*, *Mimulus*, *Mirabilis* and the 62 other genera on his list. "Some people have said that I'm trying to play God," he says. "I guess in a way I am. I want to produce something new that looks good and that people enjoy. But I think I'd still do it even if it had no practical value at all. To me, the real delight is walking into the greenhouse one morning and seeing a flower open that's never been seen before."

Rows of corn (background) keep prying eyes out of a Parker trial field, here resplendent with *Catharanthus*.

By Donald Dale Jackson

Just plain Bob was the best friend wilderness ever had

If there was anything Bob Marshall loved more than being in wild places it was finding ways to make sure they stayed wild

The Sun River winds through Montana's Bob Marshall Wilderness (opposite), named after the man who championed the principle of wilderness preservation.

Bob Marshall, age 24, was en route from the family home in Manhattan to Missoula, Montana, in the summer of 1925 to begin his first full-time job with the U.S. Forest Service when a rock slide halted his train. Passengers were told that the delay would be at least ten hours. Bob saw it as an opportunity. Iowa was a half-mile away, and here was a chance to add a new state, as he wrote his family, "to my list of those in which I have exceeded thirty miles walking in a day." Instead of a tedious wait in the railroad coach he "enjoyed a delightful walk" and "furthered a rather foolish, but interesting, ambition."

In the years that followed, Marshall grew into an extraordinary conservationist, forester, writer, bureaucrat and outdoorsman, and he was the one person who did more than any other to establish the principle of wilderness preservation in the United States. That principle became policy 30 years ago next month, when President Lyndon Johnson signed the Wilderness Act empowering Congress to set aside and protect remote tracts of land unsullied by civilization.

Marshall was in some ways a lifelong kid, a canny kid to be sure, but a man with something of the perpetual adolescent about him. He bounced through life, scampering up hills and mushing through bogs and racing from adventures to appointments, and followed his boyhood dream of visiting Alaska to the wildest reaches of the Arctic. He made lists and ratings of nearly everything he did and thought and saw–girls and books and mountains and trips; he kept baseball statistics till the year he died, and he never married. He was shy as a boy, with his jug-handle ears and sly smile that made him look simultaneously knowing and a little goofy, and as a man he was good-natured and full of fun, forever galumphing around with a child on his shoulders.

He gave most people he met–lumbermen were an exception–the benefit of the doubt, and he was never cynical. He was aggressively, unapologetically *Bob*, just plain Bob, please. When a woman friend addressed a letter to "Mr. Marshall," he was aggrieved enough to reply, "My name is Bob, always has been Bob and always will be Bob. When you call me Mr. Marshall it makes me feel so thoroughly miserable I want to knock my head against the side of a house." And he might well have done it, the way he once departed a Washington soiree by descending the front steps on his hands, or the way he executed an impromptu somersault in Associate Justice Benjamin Cardozo's Supreme Court chambers just as the Justice walked in. If the dictionary had a picture next to the word "irrepressible," it would be a portrait of Bob.

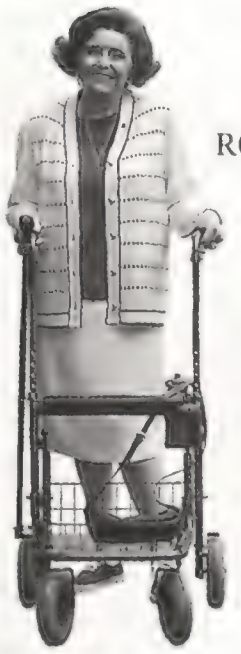
Yet for all his boyish gusto he was the most effective champion of wilderness of his time, perhaps of any time.

He was a triple-threat wilderness advocate: a scientist (a forester with a PhD from Johns Hopkins in plant physiology), a bureaucrat (four years as chief forester for the Bureau of Indian Affairs, two more as the Forest Service's chief of recreation) and a gifted, evocative writer, the author of three books and scores of articles that mixed lyrical descriptions with forceful briefs for preservation. Only Thoreau, who was one of his heroes, and Aldo Leopold, a friend and fellow founder of the Wilderness Society, belong on the same eminence with him–and neither had his talent for politics.

That may have been Bob's trump card. He was pragmatic enough–just barely, but enough–to operate successfully in government. He knew how and whom to lobby, how to stroke the powerful, how to bargain and when to back off. These were endowments rarely found among conservationists, especially when the movement was in its infancy. The result of his efforts can be quantified: 4.8 million acres of Native American land preserved as wilderness, another 14 million in the national forests protected because of his nonstop exertions.

At first glance it seems ironic that all this was achieved by a boy who grew up in a wealthy, cultured Jewish family on East 72d Street in Manhattan, but the first glance is misleading. From childhood, Bob, his brothers, George and Jim, and their sister, Ruth, spent summers at the family's lodge on Lower Saranac Lake in the Adirondacks. Bob and George climbed their first peak when Bob was 14. Soon he was lacing letters to his father, a respected constitutional lawyer, with such Bob-devised mountaineering categories as AAPIVAC (All Around Pleasure In View and Climb). As a senior at New York's Ethical Culture School, he already knew he wanted to be a forester. "I love the woods and solitude," he wrote in a class paper. "I would hate to spend the greater part of my life in a stuffy office or crowded assembly, or even a populace [sic] city." By 1925 he and George had become the first mountaineers to ascend all 46 Adirondack peaks above 4,000 feet.

Bob liked writing almost as much as hiking, and he filled countless journals with meticulous accounts of his treks. Writing, hiking and exploring were bound together in his mind, they were all of a piece, all part of the joy of the outdoors. He wrote an unpublished novel called *An Island in*



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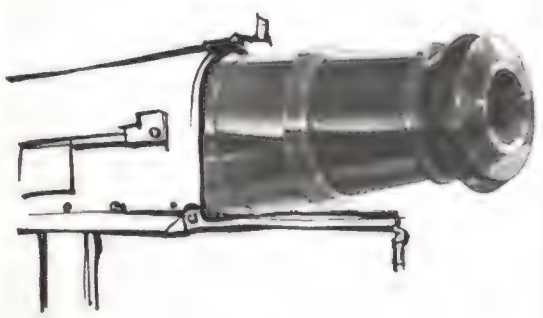

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Bob and fellow activist Sigurd Olson paused during a northern canoe trip.

Oblivion during a yearlong sojourn in northern Alaska in 1930-31, a period during which he also produced two nonfiction books. The hero of his semi-autobiographical novel describes his reaction to his first view from a mountaintop as a teenager this way: "I felt as if I had just been born again . . . as if I had gone up in a balloon and drifted to some eminence on Mars."

His finest nature writing ranks with the best ever. Here he is atop another peak–he was forever perched on a summit somewhere–in the Utah canyon country: "The wind blew up from the river, fresh and mysterious against my face. The air was alive with the faint odor of juniper. Far, far away, beyond the river, beyond the canyons, beyond countless miles of mesa . . . rose a snow-covered divide that seemed to bound the Universe. Between me and this dimmest outpost of the senses was not the faintest trace of the disturbances of man; nothing, in fact, except nature, immensity, and peace."

After high school, he spent a year taking liberal arts courses at Columbia before entering the New York State College of Forestry at Syracuse. His friend and Syracuse roommate N. W. Hosley remembered Bob for his habit of timing speakers and for his recipe for "broiled eggs," which were first hard-boiled, then sliced and broiled; one gourmet compared the result to "fried golf balls." Hosley also recalled that Bob never fretted about keeping his shoes dry on muddy trails; his strategy was to slosh through the first puddle he encountered to preclude further worry. Bob took special pride in his athletic exploits at college; an account he wrote of his senior year begins with the letter he won in cross-country and his third-place finish in one race, then lists his class ranking (fourth of 22) and office (secretary).

In the years between his graduation from Syracuse in 1924 and his first high-profile Washington job in 1933, he frittered away his time by obtaining two graduate degrees, working three years as a forester, writing three books and an article that launched the wilderness movement, hiking and climbing and freezing without whimpering during two visits to Alaska, and stirring things up wherever he happened to light. A folder of favorite quotes among his papers at the University of California's Bancroft Library includes one by abolitionist Wendell Phillips that Bob must have identified with. "When the muse of time shall be asked to name the greatest of them all," Phillips wrote, "she shall write across the clear blue sky–*agitator.*" Agitator Bob was, early and late; his main vexation was how to balance his yen for agitation and achievement with the lure of unclimbed mountains and unseen sunsets.

He spent a year getting a master's in forestry at Harvard before beginning his three-year tour with the Forest Service in the West. At this time he was writing scientific papers on forestry and arguing against clear-cutting and other short-sighted lumbering practices. He was also experimenting with humor writing and quasi sociology. He wrote an academic-style article on the habits and conversation of lumberjacks, reporting that their

Donald Dale Jackson, who has been known to climb a hill or two himself, profiled Ken Burns in the July issue.

use of words "unmentionable at church sociables" averaged 136 every 15 minutes. He compiled a chart of his articles and his attempts to sell them, but he was sensible enough to get a PhD too, even if it meant two years in Baltimore, where "you see the sunset across sidewalks spotted with chewing gum and gasoline."

But Baltimore had its attractions. He reported to a friend that he went out with 23 different women during the two months before he received his doctorate in 1930. He never had a problem finding dates and had several serious romances. ("My God, another one!" his sister, Ruth, once wrote. "What are you doing these days besides falling in love?") Somehow, though, he managed to remain, as he put it, "blissfully unmarried." His elaborate rating system for women, with number values for qualities such as intellect, physical ability, interests and sex appeal, may have winnowed out every contender.

On a break from his Forest Service job in 1927, Bob was hiking alone through the Selway National Forest in Idaho, exulting in the fact that by his reckoning he was 65 miles from the nearest settlement, when he suddenly found himself between two grizzly cubs and their mother, who was 30 feet from him. In a flash the huge bear charged. Bob scrambled to a pine tree and climbed 10 feet, but stepped on a dead branch and tumbled to the ground. He had heard that bears wouldn't bother someone who feigned death, so he lay still for what seemed like eons. "About the dawn of the Cenozoic Era," he wrote home, "I heard strange rumblings. I looked up in time to see three bears disappearing over the ridge. It was a terrible blow to my self-esteem."

He took his first journey to northern Alaska in the summer of 1929, glorying in the chance to explore a place where the names were not yet filled in on the map. He returned the following year, settling into a ramshackle cabin in the gold-mining town of Wiseman, north of the Arctic Circle, and staying 13 months (below). His excuse for the trip was a study of tree growth in the Far

Tiny but tidy cabin where Marshall spent one winter in Alaska contained a phonograph (right side of table) he played for visitors.

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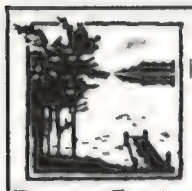

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North, but the truth was that everything about Alaska appealed to him–the opportunity for adventure, the frontier mentality, the stimulus of raw hardship, the imperative of outdoor competence. Alaska helped him hone his evolving ideas about wilderness.

Arctic Village, the book he wrote about Wiseman, was a sociological portrait of what Bob idealized as a utopian community where prejudice was nonexistent, everyone was his own boss and bliss prevailed in spite of climate and isolation. If the book erred in the direction of exuberant romanticism, which was Bob's Achilles heel, it also displayed his developing writing skill and his relentless curiosity.

He had intuitively embraced the idea of wilderness preservation as far back as his boyhood rambles in the Adirondacks. He articulated the theme formally in a landmark article titled "The Problem of the Wilderness," which appeared in *Scientific Monthly* in 1930. Wilderness, he contended, was vital for physical and mental health, it gratified every sense, and it was a crucial part of our history and national character. Unchecked development threatened to decimate the surviving remnants. Sounding a new tone of militance, he concluded that there was "one hope of repulsing the tyrannical ambition of civilization to conquer every niche on the whole earth. That hope is the organization of spirited people who will fight for the freedom of the wilderness." The hope would take five years to come to fruition in the birth of the Wilderness Society, but with the publication of this manifesto the movement had its leader.

Bob's politics had moved steadily leftward since his college years, and by the early 1930s he identified himself as a Socialist who believed in the abolition of profit, rent and interest, and in government ownership of natural resources. He made no secret of his beliefs, contributed to Socialist organizations, spoke at meetings and was arrested at least once, in a demonstration for an increase in unemployment benefits.

Bob nonchalantly kept his hands in his pockets while portaging a heavy load.

He weathered several red-baiting attacks during his years in government, but as his biographer James Glover wrote in *A Wilderness Original: The Life of Bob Marshall*, "few people have ever loved their country as Marshall did," and he loved it "from the ground up, starting with the soil and rocks and ferns and trees."

Mountaineer Paul Schaefer and his friend Robert Cromie were on the summit of Mount Marcy, highest peak in the Adirondacks, one morning in July 1932 when they spied a tiny figure moving rapidly out of the conifers below them. A tanned, grinning man appeared and introduced himself as Bob Marshall. His mission was to climb as many Adirondack peaks as he could in a day, he explained; the total would be 14. Schaefer and Bob chatted briefly about recent high-elevation logging and other threats to the Adirondacks. "We simply must band together, all of us who love the wilderness," Bob declared. He promised to keep in touch (which he did) and a few minutes later he was gone, pausing only to wave before reentering the woods.

By the time Franklin Roosevelt was

inaugurated in 1933, Bob had made enough of a reputation to be appointed head of the division of forestry and grazing for the Bureau of Indian Affairs, under Interior Secretary Harold Ickes. Bob, being Bob, plunged headlong into everything. He represented the government in discussions of land issues with Native American leaders. He churned out a stream of memos opposing National Park Service road projects in the Shenandoah and Great Smoky Mountain parks, and leapt into another battle over a proposed parkway through the Green Mountains in Vermont, a plan that was eventually abandoned. He peppered Ickes with suggestions, requests, strategies. In one memo, he apologized for being "damnably pestiferous." Nor was he above a little calculated flattery: an Ickes speech opposing unnecessary roads, he wrote his boss, left him "completely jubilated."

Bob's idea of a national organization devoted to the protection of wilderness resurfaced in 1934. The impetus came from Benton MacKaye, father of the Appalachian Trail, and trail activist Harold Anderson, who sent a letter to MacKaye in August 1934 proposing a federation of hiking clubs to fight road-building in the Appalachians. MacKaye, who like Anderson had admired Marshall's *Scientific Monthly* article, got a wire from Bob at about the same time, saying he was coming to Knoxville, Tennessee, where MacKaye worked for the TVA, and wanted to get together. MacKaye saw a chance to discuss Anderson's idea.

Bob, as always, was enthusiastic. He immediately transformed Anderson's hiking federation into an association of "all friends of the wilderness ideal." Later MacKaye, Harvey Broome and Bernard Frank clustered around Bob on a Tennessee hillside and worked out the definitions, statement of principles and name for the new organization, together with a list of potential cofounders–Aldo Leopold among them–and members. "We want no straddlers," Bob wrote, "for in the past they have surrendered too much good wilderness." The others wanted him to be president, and he was willing, but Ickes vetoed the idea because of the potential conflict with Interior agencies.

The Wilderness Society charter that emerged in January 1935 defined five types of wilderness areas and specified objectionable encroachments including logging, roads, dams and power lines. The society would be funded by donations, the charter said, noting that one anonymous contribution of $1,000 had already been received. Bob was the anonymous donor.

He had acquired a generous inheritance when his father died in 1929 (his mother had died when he was a teenager), but he valued money mainly for the independence it provided as well as the freedom to help his friends. He never owned a house or car and preferred furnished apartments. He shared his royalties from *Arctic Village* with the people of Wiseman, and helped them further with cash gifts. He was always eager to return to the Far North, writing a Wiseman friend that he wished he was "out with you in 40-below weather instead of sitting in a warm steel office," but work kept him in the lower 48.

In 1937 Bob took over a new job as chief of recreation for the Forest Service. He brought to it a characteristically ambitious agenda. He had inventoried the remaining roadless areas in the country and found that 80

Pack dog Moose accompanied Marshall on his fourth trek in the Alaskan wilds.

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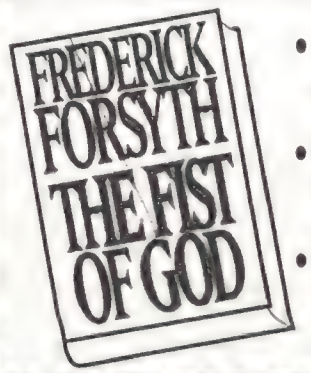

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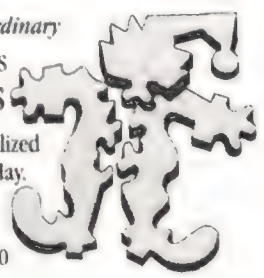

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percent of those with more than 100,000 acres were in national forests. His goal was to get as many as possible classified as "primitive," then to tighten the rules to exclude roads, logging and other intrusions. In addition, he wanted to end racial discrimination by resorts operating in the forests. Within five months he had helped to establish several new roadless areas and to enlarge others, mostly in the mountain West, and the following year he gained Forest Service approval of new rules barring motor vehicles, summer homes and logging in primitive areas.

He bounded joyfully into every wilderness brouhaha, subsiding good-naturedly when he was defeated, roaring into battle again the next day. Even when he lost, he wrote, it was better "to go down fighting in a cause in which you believe than to refuse to fight because you may get a beating." A file among his papers lists dozens of conflicts involving the Appalachian Trail, the Grand Canyon, the Great Smokies, Kings Canyon in California, Grand Portage Road in Minnesota, Yellowstone Lake, and many more. But he knew when to compromise. He advised a friend to support the Kings Canyon park bill, despite its imperfections, because it prevented water development, which could mean a dam.

Bob's far-left politics drew intermittent fire from several Congressmen. When his name surfaced as a member of the American League for Peace and Democracy, which the red-hunters labeled a Communist front, he cheerfully acknowledged membership and endorsed the group's aims. But when his laundry enclosed a note with his clean underwear promising not to employ members of "any organization designed to destroy our American government," Bob was moved to protest. What organizations? he wanted to know. "The AFL-CIO? ACLU? German-American Bund? League of Women Shoppers? Fortunately," he declared, "I have lots of reserve shirts, B.V.D.'s and socks, so I will hold my laundry in abeyance until I hear."

On a 1938 trip to Alaska, his first in

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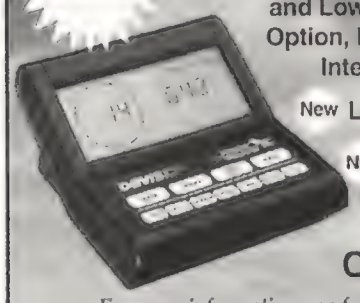

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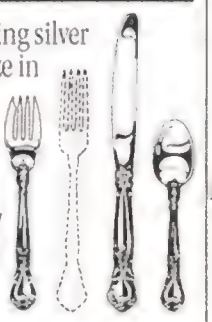

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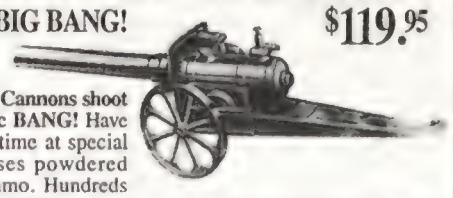

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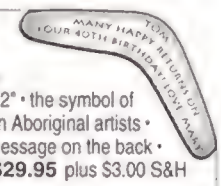

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seven years, Bob hoped to scale Mount Doonerak, an unclimbed 7,610-foot peak in the Brooks Range, but he and his companions were thwarted by foul weather. One day, boating down a branch of river that had been churned into a torrent by a blizzard, they were sucked into a tunnel the main channel had hollowed out of a gravel bank. The boat shattered as the men were thrown into the frigid water.

"Immediately I felt the overwhelming certainty of death," he wrote. "I was feeling, 'What an easy way to die. Hold my breath for forty, fifty, maybe sixty seconds . . . let it out, and it's all over." But it wasn't. He popped out of the tunnel, grabbed an uprooted spruce and waded ashore. The group started a fire, averting hypothermia, and repaired the boat. The interminable rain and near-fatal spill might have discouraged fainthearts, but not Bob. He wrote, "for purely a good time, it would be hard to beat our four weeks' adventure in unexplored wilderness."

Back in Washington he pressed for a Forest Service ban on discrimination in national forest resorts and campgrounds, many of which excluded blacks and Jews; an Arizona dude ranch advertised that "the patronage of Gentiles only is desired." He had to buck the fear that Southern Congressmen would cut the agency's funds, but he eventually won a change prohibiting discrimination by dude ranches and other permittees, though Southern campgrounds remained off-limits to blacks. He achieved a major victory for wilderness in 1939 when Agriculture Secretary Henry Wallace signed the "U" regulations, ratifying the strict guidelines that Bob had developed for protection of wilderness in the forests.

He returned to Alaska for another assault on Doonerak in 1939, but he was balked again, this time by the discovery of a sheer 2,000-foot cliff blocking the route to the summit. He philosophized that one sometimes had to acknowledge limitations and take pleasure in attainable peaks. There was majesty and wonder aplenty in those,

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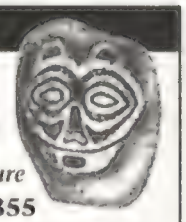

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like the vista he described from the top of nearby Apoon Mountain: "Far to the east . . . against the most distant horizon, where fact and infinity merged, the sun was shining brilliantly on countless lofty peaks without name and beyond the scope of human knowledge."

On a stop in Wenatchee, Washington, after the Alaska trip, Bob fell ill following a hike in the North Cascade mountains. He was hospitalized after what a friend described as an "epileptic fit," but a few days later he flew East. He wrote an acquaintance that he "felt depressed, which I almost never experience," but soon he was out West again, racking up 30-mile hikes in Wyoming, Utah and the Ozarks of Missouri.

On November 10, 1939, he boarded the midnight train in Washington for New York, where he planned to visit his brothers, George and Jim. He was found dead in his berth after the train pulled into Penn Station. Bob was two months short of his 39th birthday. An autopsy revealed coronary arteriosclerosis and evidence of leukemia.

Both his family and friends were shocked. Hardly anyone could remember him ever being sick, and *Bob dead*–the two words seemed incompatible, a contradiction. He was life, vitality, energy, fun. "It was always like walking from a smoke-filled room into the crisp North Woods to meet Bob," his friend Jim Dombrowski recalled.

His onetime boss, Indian Affairs Commissioner John Collier, called him "the most strenuous and effective advocate of the wilderness who had yet operated in American public life." Indeed he had become the recognized champion of wilderness, its most passionate and articulate spokesman. Collier's tribute came as close as any to capturing Bob Marshall: "He who had walked 70 miles in one day and been fresh at the end of it; who physically as well as intellectually and socially lived the athletic life; who had so much more to do, so much longer to live; and now the sudden word of his death. From happy brightness at once to the incomparable silence–to the wilderness, to the woods of the Universe."

Bob Marshall never had trouble coaxing smiles from the children he came to know and cherish in Wiseman, his adopted Alaskan village.

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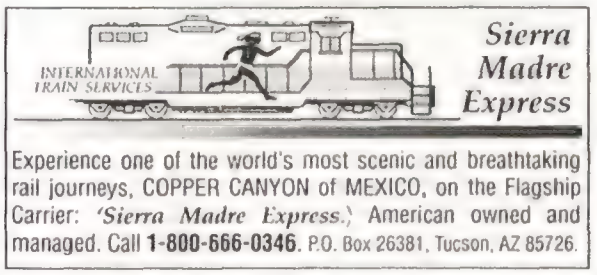
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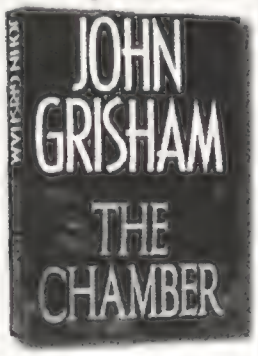

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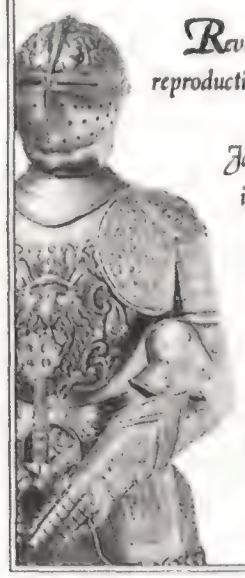
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Book reviews

Night After Night
Diana Starr Cooper
Island Press, $18

At first glance it seems a children's book. On the cover of this slender volume, bright with blues, oranges and reds, a cartoon circus tent floats like a steamship on a green-grass sea, spilling golden light beneath a crescent moon. You expect illustrations and, thumbing, find them, elephants to clowns in cheerful sketches, pen-and-ink.

And a children's book it might be, on the one hand, because it deals with–poor word, long overused–magic, in an honest way, not cheaply, with a wink, but with the solemn rapture it requires, and which children, no fools on the subject, will demand. And because it is a poet's book, it sees.

On the other hand, for reasons of language (elegant, brisk) and style (the frank conversation–not lecture, not monologue–of the skilled essayist at work on challenging ground), *Night After Night* is not at all a book for children. The argument that rises through passages of marvelous description is unavoidably important. The book, for all its close attention to the details of wonder, is desperately serious on the subject of animals and work.

Diana Starr Cooper builds her story chronologically–relating, with ruminations and asides, a single performance of the Big Apple Circus on a summer evening in rural New Hampshire. Through every act within and far above the 42-foot ring ("the size you need . . . to make the back of a galloping horse most hospitable to a person dancing"), Cooper soars on the expressive nuance of the elephant's trunk, the horses' atmospher-

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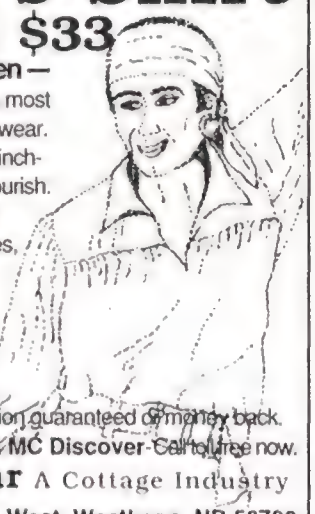
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ic shine, the camels' unusual aroma. We are introduced to Zamoratte the contortionist, Katja Schumann (the ringmaster's wife, world-class horse trainer and mother of two) and Ethan, a small boy from the audience in the perilous company of clowns. On the basis of description alone, of mood, *Night After Night* is a minor treasure. To distill a circus performance into prose, and do it from the heart, one runs the enormous risk of drooling, of the sentimental slip. Prancing ponies, cuddly camels, trapeze damsels glimmering on high; there is no subject more hazardous than circus for those with a latent tendency toward purple phrases. Cooper shows, to my ear, an overfondness for the word "wonderful"—a wonderful word, of course, used sparingly. But she cannot, truly, be faulted. There is no drool here. Only an expansive and well-mannered joy.

Circus, like any performance art, is hard work, the result of which is kinetic beauty, and of course, when it happens, real magic. Excessive sentiment with animals is bad in any context, disastrous when there is work to be done. Says Katja Schumann: "Of course we love the horses, but they are not pets; they are colleagues." Cooper's love for her own animals (she lives and works with them on a Connecticut farm) is "private, just as it is with my husband or my children." With frank disdain of the animal as mere love object, Cooper notes: "horses, and many dogs, do not like being hugged. I don't know what an embrace of her trunk and leg would mean to an elephant. Big cats are not, strictly speaking, huggable at all."

She tells the tale of Martha Kiley-Worthington, an English animal-behavior research scientist, hired by the Royal Society for the Prevention of Cruelty to Animals not long ago to report on animal welfare in zoos and circuses. After 18 months of research in more than 15 circuses, Kiley-Worthington concluded that, by and large, "circus animals lead good, happy, healthy lives, and that animals would be harmed, not helped, if their work in circuses were outlawed. . . ." When the RSPCA refused to publish these findings, Kiley-Worthington published them herself: *Animals in Circuses and Zoos: Children's World?* (Little Eco-Farms, 1990). That cruelty exists, Cooper acknowledges; but she warns, "the assumption that *any* work with animals, *any* appearance of them in performance, *any* training, is by definition cruel, is not only untrue; it is dangerous. And it has become wantonly common."

An alternative to traditional circus, increasingly popular in this correctly worried age, is the circus without animals. One example is the Canadian-born Cirque du Soleil. This is a spectacular production, as Cooper would certainly admit, but she laments: "the tone which people use when they praise circuses for being without animals is heavy with exaltation in their own exquisite sense of higher virtue, when the only appropriate tone is one of mourning for what has been ruined and lost."

Subtract–with age, accident or that traitorous agent, the needle–one good beast from one good human family and that family will walk thereafter with a somewhat less substantial tread. One can scarcely imagine, then, the stoutness or delusion in the hearts of those who fight, and some do fight, to subtract *all* beasts–from yards, fields, trails, beaches, parks, zoos, circuses, from ordinary human sight and company–in order to remove them to that distant haven, undefined, where they will live forever safe from our predation. This they would do for the animals' benefit, they say, and I accept their good intentions. I reject, wholeheartedly, their aim, for it is impossible to achieve, now or ever, as well as inadvertently wicked. Our real choices are simpler and more grave. We will learn to live with animals fairly, or we will continue to live with them as we live with one another, with much goodness and much wanton stupidity and some perverse cruelty, or we will push ourselves, through inflexibility and misguided righteousness, to policies that hasten the extermination of them all. To remove–rather than repair and regulate–the fixtures in society, the customs, including circuses, through which we come to know and care about animals, is to invite this last, most tragic conclusion.

With *Night After Night*, Diana Starr Cooper has offered an intelligent and useful alternative.

"Circus demonstrates that there are ways for people and animals living with one another to behave, to prosper, to create something valuable together. It invents a landscape within which species operate–not by murder and mayhem, nor by isolation, nor by sentimentality–but with this firm resolve: *we will stay here together.*"

Andrew Todhunter is a freelance writer based in Washington, D.C.

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By Bruce Anderson

Put on your Mae West, order a Shirley Temple and answer the Ameche

When Don Ameche died last year, his death knell was sounded for me by the ringing of the telephone. Or, I should say, the ringing of "the Ameche," as it was always called at the Anderson household. As a grade-schooler, I thought nothing of it when my dad said, "Bruce, pick up the Ameche." Or when my mom asked, "So who was that on the Ameche?"

Over the years, I noticed that my friends referred to the phone as "the phone." Or they might call it "the horn." But never "the Ameche." Nor did the culture around me resound with the name "Ameche." Clark Kent didn't don his tights in an "Ameche booth." Maxwell Smart didn't check in with 99 or the Chief on his "shoe Ameche." Why had my parents, on this one word, decided to deviate so far afield from Standard English?

As my sister Kelli pointed out, the Ameche actually wasn't the only dictionary detour taken in our family. When I called her–on the Ameche, of course–to commiserate over the actor's death last December, she reminded me of another piece of Anderson argot. "Dad has a language all his own," she said. "Remember what he calls ice cream?"

I had to confess that I did not.

"Decump-decump," she said smugly.

Ah, yes, decump-decump. It was the fanciful creation of an 18-month-old neighbor, and Dad latched onto it, like a pit bull onto a sirloin.

But the Ameche was different. It flowed from the less colorful and more reasoned world of adult language. Early in his film career, Don Ameche had played the title role in *The Story of Alexander Graham Bell.* (I'm not sure what it is with Dad and Bell: Dad's favorite sandwich is the "Alexander Graham Bellski," a creation of the Chestnut Street Grill in San Francisco that includes salami, provolone, anchovies, tomatoes and Russian dressing.) The actor became so thoroughly linked to his role as the inventor of the telephone that many people took to calling their phone "the Ameche."

Don Ameche was not the only screen star to have his or her name turned into a word. A "Shirley Temple," for example, is a kid's drink. "Mickey Mouse" is small-time. "Marilyn Monroes" are the tight, high-cut basketball shorts that have given way to baggy, knee-length trunks. To "Bogart," a word favored by dopers, means to inhale more than your share of a joint (the way Bogie used to smoke his on-screen cigarettes).

The first Hollywood star to be so honored was probably Mae West. In the late 1930s, pilots for Britain's Royal Air Force dubbed the life jackets they wore "Mae Wests." The voluptuous actress later sent a letter to the RAF: "If I do get in the dictionary–where you say you want to put me–how will they describe me? As a warm clinging life-saving garment worn by aviators? Or an aviator's jacket that supplies the woman's touch while the boys are flying around nights?" She finished with a flourish: "I've been in *Who's Who* and I know what's what, but it'll be the first time I ever made the dictionary."

Unlike the others, Don Ameche had his name turned into a word because of a specific screen role. And in the 1940s, at least, it was a word used by millions, not just by my parents. In the 1941 movie *Ball of Fire,* for example, two gangsters talk to the nightclub singer Sugarpuss O'Shea (played by Barbara Stanwyck). One gangster intones: "Meanwhile, lie low and stick close to the Ameche."

"The what?!" Sugarpuss asks.

"The telephone," answers hood No. 2.

The Western Historical Manuscript Collection at the University of Missouri supplied me with a potpourri of other "Ameche" citations. In 1944, *Esquire* published a profile of J. G. Taylor Spink, publisher of the *Sporting News.* "A cross fire of wires or phone calls at almost any hour. . .is the price one pays for gaining Spink's confidence," wrote Hugo Autz. "Some correspondents count up to as many as eight to ten messages in a day. Yet the entire fourth floor office has only two Don Ameches."

A year later, in the comic strip "Freckles and Her Friends," Freckles said, "You're wanted on the Ameche, June! Better wear a bathing suit–the Webster is slightly moist!" (The Webster? I guess it was just slang for Ameche.) In 1947, the "Smart Set" section of the *San Francisco Examiner* reported "You'd make a beeline to the nearest Ameche (phone in plain language) and give 'him' and a few others a buzz."

Such references are now obsolete. When I polled the folks in my office, they all sounded like Sugarpuss. "The what?!" Young and old, Eastern-bred and California-reared, film lovers and phone hounds, they had never heard the telephone called an Ameche. In my own defense, I pushed the obituaries under their noses and said, "Read!" The *New York Times* explained: "For many years after the 1939 film, many Americans referred to their telephones as 'the Ameche.'" Echoed the *Los Angeles Times*: "Ameche's identification in the role was so encompassing that for years the phrase, 'You're wanted on the Ameche' meant you had a phone call."

The obits marked not only the passing of an important player in film and stage, but of a tiny, lively, lovely part of our language. But language, like life itself, has a way of regenerating. If we can't keep the Ameche ringing, maybe there is room in our seemingly insatiable tongue for a fresh phone phrase. One day Hollywood will probably deliver up another telephonic entry, one that better reflects the global, fiber-optic nexus of telecommunications. If you have any ideas, grab the E.T. and give me a jingle.

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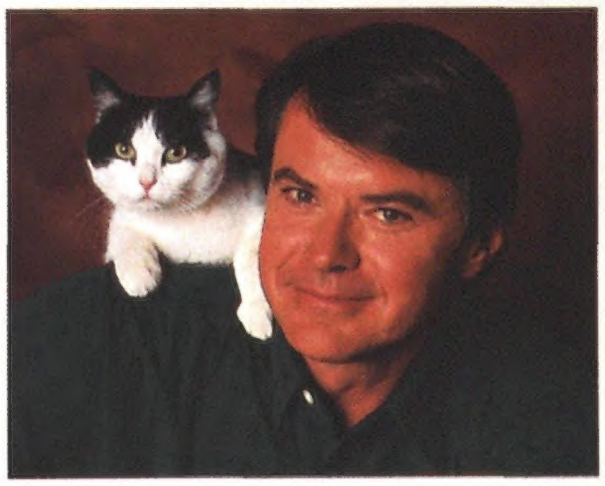

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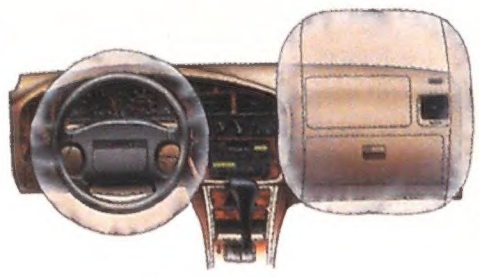

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Buckle Up! Do it for those who love you. **Automobile Magazine*, September 1992. **Most Camrys are built in the U.S. †Always use your seatbelt. Driver- and passenger-side air bags are a Supplemental Restraint System (SRS). Shown with optional equipment. ©1994 Toyota Motor Sales, U.S.A., Inc.